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THE ACTION OF QUINIDINE SULPHATE IN HEART DISEASE, TO ABOLISH THE CIRCUS MOVEMENT OF AURICULAR FLUTTER AND FIBRILLATION.*

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ONE of the most dramatic drug actions in the whole field of functional therapy is that of the restoration of normal rhythm in patients with auricular fibrillation, or auricular flutter, by quinidine.

I. HISTORICAL SUMMARY.

Quinidine was isolated from cinchona bark in 1853 by Pasteur.[1] It is an alkaloid, an isomer of quinine. It has been used in the past as a tonic and as an anti-malarial drug, 0.1 gram in the former case and 1.0 gram in the latter daily. The *Epitome of the United States Pharmacopeia and National Formulary*[2] of 1916 characterizes quinidine as follows: "At one time recommended as a cheap substitute for quinine. Inferior and obsolete."

Prior to 1914 quinine in combination with digitalis had been given empirically in the treatment of heart disease with some measure of success. There was no analysis of effect. In 1914, Wenckebach[3] reported the repeated restoration to normal rhythm by one gram of quinine in a case of auricular fibrillation which constantly recurred. He wrote, "I have since this experience repeatedly given quinine and had it given, but in only one other case have caused the cessation of the fibrillation." In 1918, Frey[4] reported, in Berlin, his clinical tests with various cinchona alkaloids in auricular fibrillation. Quinine was effective in two cases, cinchonin was without effect, and quinidine succeeded in restoring normal rhythm in six out of ten cases. Three of the six cases maintained normal rhythm for at least a few weeks, the other three quickly relapsed into auricular fibrillation. Frey made the observation that the ventricular rate rose and the auricular frequency decreased as the result of the quinidine. In only two cases were there toxic reactions, in one roaring in the ears, and in the other respiratory paralysis for half an hour, due to individual idiosynerasy to the drug (after two doses of 0.4 gram each). He gave the quinidine sulphate usually in five doses of 0.2 or 0.4 gram daily. Frey has continued the reports of his work with quinidine in April, 1921,[5] giving his results in 50 cases. In twenty-one of these normal rhythm was restored, at least temporarily. He now uses 0.4

* Given in part at the exercises at the Massachusetts General Hospital, October 18, 1921, commemorating the Centennial of the Opening of the Hospital and the Seventy-fifth Anniversary of Ether Day.

gram three times a day beginning with small doses (0.2 gram) on the first day because of the possibility of individual idiosyncrasy. He advises digitalizing at first in cases of heart failure. He has found generally great relief upon restoration of the normal rhythm. In six of the fifty cases the fibrillation was transferred to a regular flutter. The majority of the cases with recent auricular fibrillation were benefited, but only four per cent. were relieved where the arrhythmia was over a year in duration. Cases with failure did poorly.

Other clinical reports of the effect of quinidine in auricular fibrillation have appeared within the last three years, mostly in the past year. Arnell[6] reported four returns to normal in nine cases, Benjamin and von Kapff[7] eighteen out of twenty-seven, Bergmann[8] six out of nine, Boden and Neukirch[9] seven out of seventeen, Drury and Iliescu[10] six out of thirteen, Faber[11] one of two, Jenny[12] seventeen of his eighteen cases of auricular fibrillation and flutter (his total successful dosage varied from 0.5 gram in three hours to 15.5 grams in ten days), Klewitz[13] only one of fifteen, Levy[14] two of four, and Romberg[15] seventeen of twenty-two. Cohn[16] has reported experiments on dogs with quinidine, and other articles on the subject have been published by Cheinisse,[17] Clere and Pezzi,[18] Heffter,[19] Lewis and associates,[20] Meldolesi,[21] Schrumpf,[22] and Arrillaga, Guglielmetti and Waldorp.[23] Investigation, both laboratory and clinical, is now being carried on by a considerable number of workers.*

II. THE MECHANISM OF AURICULAR FLUTTER AND FIBRILLATION—THE CIRCUS MOVEMENT.

Coincidently with the discovery of the beneficial action of quinidine, Thomas Lewis was investigating the mechanism of auricular fibrillation and flutter. His experiments, based on the original work of Mayer, Garrey, and Mines, have clearly demonstrated the circus movement which is responsible for both mechanisms. In fact, fibrillation and flutter are part and parcel of the same phenomenon. Lewis[24] discusses his experiments on auricular flutter as follows: "In a number of auricles [of dogs] the direction taken by the excitation wave during periods of flutter has been studied. . . . [It] is not governed by the point at which the auricle has been stimulated. The condition flutter results from stimulation, but becomes independent of this for its continuance.

"The movement may be in either direction, namely, down or up the taenia terminalis. It is to be concluded that this *central wave* constitutes a continuous circus movement in a natural ring or cylinder of muscle existing in the intact heart. The presence of such a circulatory mechanism would explain long continued flutter in the human subject and the high rate of auricular beating. It would also explain a fact which has been pointed out previously but which has received as yet no adequate explanation, namely, the close family resemblance of auricular flutter curves taken from different points.

"During the progress of long continued experimental flutter there are in some experiments indications that, although the general path traveled remains constant, slight variations from that path may take place. Strictly speaking, when such variations occur the auricular flutter is impure."

In another paper Lewis[25] discusses auricular fibrillation. "The analysis of auricular disorders produced experimentally and yielding electrocardiograms similar to those of clinical fibrillation, show that clinical fibrillation of the auricle is a condition in which a *single* excitation wave circulates continuously through the auricular muscle. The path taken both by the central and centrifugal parts of this wave is sinuous and varies in greater or lesser degree from cycle to cycle. This auricular fibrillation, as it occurs clinically, is an advanced variety of impure flutter. The sinuous course of the waves is attributed to barriers of refractory tissue; the chief difference between slightly impure flutter on the one hand and fibrillation on the other is that in the latter the barriers are of greater extent and of more frequent occurrence. In pure flutter the effective refractory period is probably somewhat longer than in impure flutter and fibrillation."

"The term auricular fibrillation, though strictly speaking, inaccurate, should be retained."

The fundamental difference between the two types of auricular circus movement, flutter and fibrillation, is in the rate of movement, in the human heart the flutter rate varying from 200 to 350 per minute, with an average of about 300, and the fibrillation rate varying from 300 to 600 per minute, with an average of about 470. The length of the refractory period appears to determine the rate of the circus movement in a given heart (the shorter the refractory period the faster the rate).[25] The circus movement itself is set in action when the auricular muscle is stimulated while in a partially refractory condition, this partially refractory condition being produced itself by a rapid contraction rate.[26]

III. MECHANISM OF THE EFFECT OF QUINIDINE ON THE CIRCUS MOVEMENT.

In a recent paper by Lewis and his associates[20] on the manner in which quinidine acts in auricular fibrillation, Lewis writes as follows: "The circus movement in the auricle is only possible (1) if a circular path of sufficient

* Of a total of 228 cases in the literature, including the 25 new cases reported in the present paper, 130 have shown a restoration to normal rhythm (57%).

length is available; (2) if the refractory period is sufficiently short; and (3) if the speed at which the wave moves through the muscle is sufficiently slow. Otherwise the crest of the advancing wave in reëntering muscle through which it has already passed will discover this muscle to be still refractory and will be unable to proceed."

"Now experiment has shown us that in auricular fibrillation the gap between the crest of the advancing wave and its wake is very small . . . if we can find a remedy which would close this gap, either in flutter or in fibrillation, the circus action on which these abnormal movements of the auricle depend would at once cease. The first of such remedies has been discovered in quinidine." Lewis has shown experimentally that the most striking action of quinidine upon the auricle is a lengthening of the refractory period (in 50% or more of the experiments). Quinidine also slows conduction in the auricle. These two actions are opposed so far as the abolition of the circus movement goes. Preponderance of one or the other effect may explain success or failure in the action of quinidine in a given case of auricular fibrillation. At least part of the action of quinidine is brought about by a paralyzing effect on the vagus nerves as shown both by a rise in ventricular rate and by an increase in the refractory period of the auricular muscle.

IV. QUINIDINE RESULTS AT THE MASSACHUSETTS GENERAL HOSPITAL UP TO NOVEMBER 11, 1921.

A. Present Statistics.

In May, 1921, quinidine sulphate was first given at the Massachusetts General Hospital in the treatment of disturbed heart action due to auricular fibrillation and auricular flutter. The first case was unsuccessful but the next five all were restored to normal rhythm. In five and one-half months 35 cases have been so treated, 33 cases of fibrillation and two of flutter. Of this number 25 cases including one of the flutter patients, have shown at least a temporary restoration to normal rhythm (71%). The duration of the normal rhythm has varied from a few hours to over four months, in the latter case still continuing. In several cases repeated courses have been given, in two cases a third course of quinidine succeeding when the first two courses had failed. We are now meeting with greater success than at first because we are repeating attempts if unsuccessful at first, and because we are increasing the dosage in some resistant cases. Of the last 12 cases, 10 have returned to normal rhythm.

B. Types of Cases.

We have tried the quinidine in all kinds of cases with auricular fibrillation, old and young, rheumatic, arteriosclerotic and thyroid. We have succeeded or failed, no matter what the type or age. But heart failure and long duration (years) of the auricular fibrillation are definitely unfavorable factors. Complete statistics will be published later in our full report. We have not as yet tried the drug in cases of premature contractions and paroxysmal tachycardia. This we contemplate doing shortly.* We have studied the effect in six persons with normal hearts and in one case of complete heart block. There were no obvious effects of the drug in these cases.

C. Dosage.

Our dosage has consisted of 0.2 gram of quinidine sulphate, given at 2 and at 4 P.M., on the first day (usually in capsule), and then if the patient has shown no toxic symptoms or signs from these test doses, we have given 0.4 gram five times on the second day (10 A.M, 12 M., 2, 4, and 6 P.M.), and on each succeeding day until normal rhythm has been restored or until toxic symptoms or signs have caused us to stop the drug. Our total course dose has varied from 0.8 gram in a successful case to 15.6 grams in an unsuccessful case.

It is an undecided question whether it is necessary to continue occasional or steady rations of quinidine after the normal rhythm is restored or wiser to discontinue it altogether. Also the dose and frequency of such a ration, if necessary, is being investigated. Another somewhat doubtful point concerns the digitalization of the patient before the administration of quinidine and also the wisdom of giving both drugs simultaneously. Our experience to date suggests that the digitalized cases are more apt to respond to the quinidine and that it is better not to give both drugs together.

D. Toxic Symptoms and Signs.

Toxic symptoms and signs have been rare. Headache, dizziness, feeling of bitemporal fullness, slight ringing in the ears and slight blurring of vision and nausea have been complained of by a few patients. Two or three only have vomited. An important toxic manifestation reported by Frey is temporary respiratory paralysis which is combated by artificial respiration and caffein. We have seen no suggestion of it, but it is a potent reason for extreme care in the use of the drug. The trial doses are very important on the first day of treatment to avoid accident in a patient sensitive to the cinchona alkaloids. The pulse rate often rises quite considerably in some cases as an early effect of the quinidine, and the patients complain of palpitation resulting from the forceful tachycardia. It seems to be the rule that patients whose ventricular rate rises early and quite high are more likely than the others to show an early restoration of normal rhythm.

* In one case of cardiosclerosis with very many ventricular premature beats found constantly before the administration of quinidine, normal rhythm has been repeatedly restored by small doses of the drug during the past week (Nov. 21, 1921). The premature beats always recurred the day after stopping the quinidine

One of the possibilities that has been urged as a contraindication to the use of quinidine is the occurrence of cerebral or other embolism from the protrusion from the auricles of a bit of thrombus upon the restoration of normal rhythm.* This has not happened in any of our cases, with the possible exception of one patient who had symptoms suggesting a splenic infarct.

E. Beneficial Effects.

In the main there seem to be in most successful cases three beneficial effects: (1) relief from the palpitation of the abnormal rhythm (some patients say they no longer are conscious that their hearts are beating at all), (2) general improvement, and (3) cessation usually of need of continuing digitalis therapy. Some patients, especially those with much heart failure, are little if at all benefited and in these the normal rhythm is but a transient result.

F. Electrocardiograms.

The observations of particular interest in the study of daily electrocardiograms of these cases of auricular fibrillation treated by quinidine are the coarsening and decrease in rate of the auricular deflections, the increase of ventricular rate (indicating better auriculo-ventricular conduction), the frequent occurrence of auricular flutter as a transitional stage between the fibrillation and normal rhythm and the occasional production of intraventricular block, as shown by an aberration of the ventricular complexes. At times the condition never gets further than auricular flutter, lapsing back shortly to auricular fibrillation (three instances in our series) and in one case marked intraventricular block occurred without abolition of the fibrillation.

The explanation of the production of intraventricular block is not at once obvious, and needs further study; it is a transient phenomenon clearing up within a day or two after stopping the quinidine. Upon the return to normal rhythm in a number of cases, the P-R interval has been slightly beyond the normal length; this accords with the finding of intraventricular block, but not with the increase in ventricular rate during the fibrillation. The T wave is sometimes lowered by quinidine.

G. Further Studies.

The present series will be carried on until at least 100 cases have been studied with follow-up data. A full report will then be made. Among additional data of interest the heart size as determined by teleroentgenography and the vital capacity are being measured before and after the restoration to normal rhythm.

* A paper just published by Ellis (A. W. M.) and Clark-Kennedy (A. E.) in the Lancet (Oct. 29, 1921. ccl, 894) reports that five out of seven cases of well established auricular fibrillation were restored to normal rhythm by quinidine, and that in two of these five cases embolic infarction occurred one to two days after the return to normal rhythm. Benjamin and von Kapff had also reported one case of lung embolism and one case of sudden death, probably also due to embolism.

SUMMARY.

A preliminary report is made of a series of cases of disordered heart action treated with quinidine sulphate. Twenty-four of thirty-three cases of auricular fibrillation, and one of two cases of auricular flutter have been restored, at least temporarily, to normal rhythm at the Massachusetts General Hospital. A continuation of the series is in progress at this hospital and also at the New Haven Hospital.

The action of quinidine sulphate in abolishing the circus movement of auricular flutter and auricular fibrillation is one of the most dramatic in functional pharmacotherapy. The drug bids fair to become a valuable addition to our armamentarium in the treatment of heart disease. Certain definite dangers and our present incomplete knowledge as to the indications for and technique of administration in all types of cases require further study and report before the drug can be recommended for general widespread use. It should be given and studied under close observation so that its value may be more quickly learned.

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FACTORS IN SUICIDE.*

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THE possibility of suicide in a given patient is a question which occurs off and on in the practice of every physician, and it is important to the interest of the patient and his peace of mind as well as to retaining the confidence of the family and the community that he should be able to make a fairly accurate prediction.

The patient is constantly met with who says, that for this or that reason he would rather die than live. These reasons divide themselves

* Read before the New England Society of Psychiatry, May 4, 1921.

naturally into two classes, those within himself (subjective) either physical or emotional, and those outside himself (objective), domestic, financial and the like. Tanzi says that desire for death may be a rational wish arising from despair which under the burden of great misfortune may occur in normal persons. (One can readily realize that during the World War there must have been many such occasions.) Lesser situations with their accompanying feeling-tone of depression, are common to many at times. The question is, however, at what point shall we regard this attitude of mind in our patient as a real danger, and what are the factors which we must take into consideration in making an estimate of the chance that he will actually carry out his self-destructive desire.

TEMPERAMENT.

The first mental factor to analyze is temperament. We must determine whether the distaste for life springs from an idiopathically morbid temperament or is ingrafted upon a mind usually cheerful and optimistic. We have just said that it is conceivable that persons once optimistic may through stress of circumstances wish for death. There are many persons, however (and I believe the number is increasing through our advanced medical methods of encouraging the survival of the unfit), who are born with a sense of inadequacy. The mere act of living is to them a great burden and the competition of life too keen. Although naturally retiring and peculiarly sensitive to criticism, they crave love and sympathy, yet at the same time are too proud to show it. They are often born into neurotic families where there is a total lack of sympathy and a broad discrepancy between the hedonic nature of the parents, one parent being stern and believing in obedience through punishment, and the other indifferent, or wishing to exercise discipline through love, but afraid to do so. This self-depreciatory type of child is keenly sensitive to his environment and to his shortcomings. Aided by the aspersion of the stern parent, he comes to underestimate his abilities and is easily disheartened. Intellectually he may be stupid or bright, but he generally seems stupid because of his hesitancy and embarrassment in expressing himself. He is usually an idealist and something of a dreamer, perhaps because of suppressions. When he awakens to the realities of life, and finds them as he thinks, cold, hard and cruel, he is apt to throw his ideals to the winds. This is the type of boy who, if he is egotistic, becomes the dissipated youth, the dissipation merely being a cloak of bravado in which to hide his sensitiveness—a false courage, or who, if allopsychic, may be driven to suicide. I saw in the daily paper the notice of a boy of fourteen who, after a severe chastising by his father, disappeared and was found two days later, a suicide. If this boy could have found love and sympathy for his boyish ideals instead of having them interpreted and treated from a man's point of view, it is possible that he would have made a good citizen. To such young people the world offers a hard road. They come too late in life to understand and evaluate their emotional conflict, and to adapt themselves to the régime in which they must establish a place for themselves; that is, they mature late, and are, perhaps, a little backward in development. If the hardening process could progress slowly enough, these children would come in time, not only to endure, but even to enjoy life, by surrounding themselves with sufficient duties and obligations to give life a motive through service to others, at least to the few who love and depend upon them. Indeed, they are apt to be of the loyal, plodding and conscientious type.

The point I wish to make is that this temperament is often a potential suicide: that in this type the instinctive feeling-tone is one of self-depreciation, self-abasement, and should be given careful consideration by parents and teachers; that the boy may be hardened gradually and not be brought, while in his idealistic immaturity, too suddenly against the adult's world.

Not domestic friction and punishment alone, but also suggestion by example, may prove a motive for suicide in these imaginative young people. A headline in a paper reads, "A boy of fifteen hangs himself after seeing movie." It appears that this young adult, the evening before, saw the villain at a movie hang himself. The boy was a somnambulist and that night in his dream he got up, evidently imitating the villain, and suspended himself from the gas jet. The possibility of such an occurrence is a frightful thought to those of us who have constantly in our care such neuropaths. I have at present a young woman whose sister hanged herself. The patient is definitely of the self-depreciatory temperament and dreams constantly of seeing herself hanging dead. In her waking state she expresses horror of such a deed, but lives in dread that she may do it in her sleep. Analysis of her sex life has shown that she is somewhat homosexual.

THE SUICIDAL OBSESSION.

It is this mental groundwork which throughout life harbors the suicidal obsession. In such cases a glance backward through the family history will, as a rule, bring to light one or more cases of suicide. I believe (and in this Bianchi agrees), that the suicide obsession is a perfectly definite and often inherited factor of otherwise apparently normal though usually self-abasive minds. If life flows in fairly smooth

channels, and if health remains good with these people, they may relegate the idea of suicide to the fringe of consciousness and at times even for long periods, forget it altogether, but under stress it will always recur as an easy way out of difficulties which are to the morbid mind insurmountable. In these cases we must estimate the degree of interest, the power of attention, the sense of duty, the strength of love, and also the great influence of the sexual factors. (In the young woman just referred to I am trusting to her great love for her husband to restrain her from doing herself harm.) If these qualities are fairly strong and well balanced, and the provocation not too great, these morbid persons will go on living fairly normal lives and die natural deaths.

With this temperament and obsession, the philosophy toward life plays an important part. The unbeliever and the atheist is more apt to commit suicide than one who dreads a future life with its possible punishments. The Roman Catholic, because of his definite teachings from childhood on this subject, is fairly safe. With a future life philosophy, only the despair of advanced melancholia, or a definite pathological state, can bring the patient to end his life. I recall a melancholy man of sixty years who ultimately cut his throat, but who, before the act, spent weeks in reading religious discussions on immortality, to satisfy himself regarding the subject. It is well, therefore, that the kind of sensitive person of whom I first spoke should be early instructed in some religious code. However we may view this philosophy intellectually, there can be no doubt that from the therapeutic standpoint such an emotional conviction is useful. This type of mind is most suggestible and takes naturally to the comforting idea of an all-seeing, loving, and wisely-guiding hand in this universe. Once such a philosophy is implanted in his childish, unreasoning mind, it will always remain in the background of consciousness as a factor, deterring him from suicide.

PSYCHIC FACTORS.

Mere intellect probably has little or nothing to do with the final act of suicide, however carefully it may have been planned. The act itself is either the result of an outburst of a depressing or terrorizing emotion or the impulsive result of an all engulfing obsession or jealousy.

In McDougal's "Introduction to Social Psychology," under the discussion of "Instincts," the author places the instincts of self-assertion and self-abasement or negative self-feeling among the principal ones. He thinks these factors very important in the balance of individual temperament. To illustrate its primal nature, he draws on the picture of the young dog approaching an older dog. Thus: "The young dog crouches and crawls with his legs so bent that his belly scrapes the ground, his back hollowed, his tail tucked away, his head sunk and turned a little to one side, so he approaches the imposing stranger with every mark of submission." In this instinctive attitude McDougal sees the starting point of shame and bashfulness in the young child. He goes on to say, "In many cases of mental disorder, the exaggerated influence of his instinct of self-abasement seems to determine the leading symptoms. The patient shrinks from the observation of his fellows, thinks himself a most wretched, useless, sinful creature, and in many cases develops delusions of having performed various unworthy or even criminal actions. Many such patients declare they are guilty of the unpardonable sin, although they attach no definite meaning to this phrase—that is to say, the patient's intellect endeavors to justify the persistent emotional state, which has no adequate cause in his relation to his fellow men."

A little introspection makes it clear that negative and positive self-feeling are instinctive. And it is easy to recall when one or the other has dominated in ourselves. At times we have felt mentally fit or unfit, in which case the cause is subjective, or something pleasant or unpleasant has occurred in our environment when the incitant was objective. There are other times when we are wholly unable to account for our sense of well or ill feeling. I venture to assert in the majority of such ill defined feelings the cause is metabolic, or perhaps connected with endocrine disturbances.

PHYSICAL FACTORS.

On the physical side, Cannon has shown that emotional disturbances are accompanied by an increase of adrenalin and sugar in the blood, also that the coagulation time of blood is reduced during intense emotion. We know that the sympathetic system presides over dilatation of the pupil, the secretion of sweat, the supply of adrenalin, the development of goose-flesh, acceleration of the heart, reduction of blood flow in the digestive tract, and the inhibition of activity. The stimulation of the autonomic paths have the opposite result, *i.e.*, slowing of the heart, contraction of the pupil, salivation and increase in blood flow to the alimentary tract; in addition, it regulates defecation, micturition, and sexual reactions. It would seem that the autonomic mechanism of all the nervous apparatus is most closely associated with the psyche, and is especially sensitive and reactive to emotional states. The most deeply depressed melancholics I have ever seen, seem to show definite irritation of this system, small pupils, slow pulse, constipation, etc. It is well known that practically all cases of depression show a slowing up of bodily functions. We

know that a very large portion of our nervous reactions proceed without clear tokens in consciousness; this may explain why depressed patients give such bizarre reasons for their feelings. We know, also, that the general coloring of consciousness is symptomatic of much that is taking place in the nervous system and indirectly in the bodily organs. Prof. James long ago pointed out that bodily conditions or states precede the emotions. Dr. Head of England, has placed the psychic fusions of bodily states of well or ill being in the optic thalamus and draws the inference that this organ is the seat of the emotions and perhaps for the love of life or desire for death. We are all familiar with the thalamic syndrome in hemiplegiacs. From all this material it may be deduced that in depression states, the mental functions are disturbed because of a faulty action of the sympathetic and autonomic system. This part of the physical mechanism being subnormal, the blood can theoretically be supposed to be deficient in adrenalin and sugar and its coagulability decreased. I had a man markedly depressed and suicidal, who had pin point pupils, slow heart and some salivation. His Wassermann was negative and there were no paretic symptoms, though he had a history of chancre, for which he had had his penis amputated. His cranial autonomic was undoubtedly irritated. He was given adrenalin 1-1000 grain by mouth and an excess of sugar and gelatine in his diet. It would have been an interesting experiment to have given him an intravenous injection of these ingredients in normal saline. This man made six attempts to hang himself, but ultimately died of erysipelas.

A man, sixty-nine, now under treatment is depressed. His sister, whom he was caring for, hanged herself last fall. I have had his blood analyzed, with the following results: Sugar and creatinin, normal; urea and uric-acid increased; total nitrogen increased. The sugar is normal, and this would seem to negate the above hypothesis.

SEXUAL FACTORS.

The part of the hypothesis of the Freudian School which assumes that vacillation of moods is due to the friction between our social and instinctive natures going on in our unconscious psychic complexes is a reasonable assumption. To Freud, the libido is a great emotional energy which ultimately expands into all the fruition of affections; joy and grief, happiness and unhappiness, and appreciation of aesthetic values. In this philosophy the person who has a normal, well balanced sexual life and conforms to the standards of society, is fairly sure to achieve happiness, while one who continually harbors unfulfilled wishes and whose sexual life is in constant contention with his ideas is most unhappy.

There was lately under my care a woman of fifty-five years, whom I have known well for many years. She had taken gas with suicidal intent after careful preparation, writing farewell letters to her brother and sister and the like. She was almost successful, having been resuscitated with much difficulty. I discussed the subject of suicide and her reasons for it with her at great length. She was a highly intellectual woman of strong musical and emotional nature. She said that she had not married because of the marked traits of insanity in her family (her mother and sister were insane), and that for years she had not been able to repress her sexual desires and had practised constant self-abuse and perversions of a homosexual nature while posing before society as a respectable woman, and that in her agitation she had pulled out all of her hair (she wore a wig), thus making her unhappy habit evident. In the presence of this evidence, she could not face her friends and preferred to die. Throughout her life she had suffered from mild exhilarations and depressions, not sufficient to make necessary her confinement in an institution, but marking her as distinctly moody. To the alienists, she was undoubtedly a case of manic depression, and we know that perverted sexual habits are a common accompaniment of this state. Nevertheless it was a sexual phase of her trouble which dominated her mind and led to her desperate act. A few months later she succeeded at home.

There can be little doubt that persons who suffer from excessive sexual desire, yet through prudery or fear of social ostracism, constantly restrain and repress such wishes, are very unhappy and are frequently candidates for suicide.

The antithesis of the wish to beget life is to destroy it. I have known women who in their dreams were constantly throwing babies off high places, and one who frankly said she longed to use babies for pincushions. So great was the wish that she had to give up nursing in a children's ward. She talked of suicide frequently, but so far as I know, has never attempted it, though I believe in time she will.

On the physical side, Dr. Swan of Cambridge, formerly medical examiner, tells me that in men who have committed suicide he frequently finds an atrophied testicle. Whether this is merely coincident, or a determining factor, is not clear. It is well known that depression cases are usually lacking in normal sex desire. Here the inability to beget life seems, at times, to have as its corollary the uselessness of a continuance of life.

There can be no doubt that sexual perversions, especially homosexuality, in otherwise normal persons is a frequent cause of suicide. Only this winter, I saw a brilliant young college woman who, though only thirty-six years old and having a professional training, had

lived a restless, roving life, and had been a failure because of her inability to apply herself to her work. From childhood she had been subject to hysterical tantrums and had always had a "crush" on some one of her own sex. First it was her teachers, later school chums. When each of these friendships were broken up she had had severe nervous breakdowns. I saw her after the last "affair," which, she said, was "of course only platonic." A relative of this chum, however, said that for six years the patient had been desperately in love with this girl and intensely jealous of her. She had given up her business to be with her and when apart, through working hours, would send her one or two long letters a day. If the chum did not return on time, she would have a tantrum and threaten suicide. Once she cut herself to secure attention and sympathy from her. Finally, this chum, in self-defense, had to take a trip for rest. It was then that another breakdown occurred and the patient came for treatment, remaining only three days and leaving abruptly when she found that I knew too much about her. We were requested to commit her, but this was not possible because of her clever and very rational mind. She shot herself a few weeks later.

I realize that not all homosexual persons are candidates for suicide, but when this perversion occurs in a sensitive, keen nature, it is certainly a predisposing factor. Underneath the egotistic, self-assertive attitude which these people often display, is a capacity for intense jealousy and a self-consciousness of anti-social desires, which, as life advances, culminate in a consciousness of society's abhorrence and a dread of discovery and ostracism. The only way out is death.

I had a similar case in a man, a musician. He came from the Psychopathic Hospital, where he had been taken after attempted suicide. He acknowledged that women were repulsive to him, but that young boys fascinated him. Through a long system of reëducation and several months on a farm, this patient succeeded in so readjusting himself that he has returned to his work and is safe for the present.

Sadism may lead to both homicidal and suicidal tendencies, as exemplified in the case of Harry Thaw. Masochism may also lead to suicide. I had a woman of thirty-one who had over thirty razor cuts on her arms and legs, and who, after going home, took gas to free herself from her unhappy psycho-sexual dilemma.

MANIC DEPRESSION.

That all cases of manic depression of the depressive phase are potentially suicidal is a psychiatric axiom, but I fear the general physician does not always place sufficient stress upon this fact. Persons who are moody may be hysterical in the Freudian sense, or what is more probable, they suffer from an unstable metabolism resulting in rapid changes in weight, sleeplessness, and blurred mental processes so common in manic depression. Most of these persons have definite neuropathic heredity, and should be closely questioned to determine if their minds are of the self-condemnatory type which might, under stress, harbor the seed of self-destruction. There is a peculiar type of depression in which the patient cries a good deal, that is, unless he has become dry-eyed from the depth of his depression, in which he constantly tells you that he does not want to die, indeed, he is afraid he may, but to avoid the calamity which he dreads, he is afraid he will kill himself. I know of a man who has nearly succeeded in hanging himself several times but fortunately he has always been found in time to resuscitate him. He cried most of the time, and at the height of his attack always had the same delusion, namely, that his bowels and urine would stop tomorrow, so he must die today.

A woman patient was in a similar state. She was a school teacher, fifty-six years of age. She said she knew she would kill herself and begged to be protected. A family physician who came to see her said he thought that because of this insight, she was safe to be at large and allowed her, against my advice, to go to a nurses' home, "where she could have normal surroundings." A week later, while out walking alone, she threw herself over a bridge, in front of a moving train, and was instantly killed.

ACUTE HALLUCINOSIS.

There is another type of patient with active auditory hallucinations who should always be closely watched. If the hallucinations are blasphemous and self-condemnatory, they are very terrible to withstand and the victim will take almost any avenue of escape from them. One man jumped off a roof to escape supposed persecutors who were following close on his heels. A young woman, Roman Catholic, cut her throat because the voice told her she had had a black baby by her father. She did not succeed in killing herself and her hallucinations were only slightly faded a year afterward. If these patients are cared for at home, they should have a day and a night nurse, and at no time be left alone.

HYSTERIA.

Do hysterics sometimes kill themselves? Dr. Edward P. Colby once asked me if I ever made a mistake in judging potential suicides in hysteria, and added that he had twice done so. This was a remarkably good record for a man with so large an opportunity for making er-

rors. I must confess, however, that the death of a following case was a great surprise to me. It was that of a young Russian Jew lawyer, aged 26. He came of a theatrical family and was himself a most dramatic type of mind. He had always been at odds with his family, arrogant and self-sufficient, and had put himself through night law school by selling papers, rising early and working late.

At the end of his law course, he took the bar examinations four times before passing. While waiting for the returns from the last examinations he developed a typical attack of hysterical blindness which was promptly cured by suggestion at the Peter Bent Brigham Hospital. Later he developed mutism and a somnolent state, but no retardation, and was similarly cured. When he found he had passed the bar examinations he went into politics and was, though a dramatic and successful speaker, an unsuccessful candidate for the state legislature. Following this, he had another hysterical attack. After recovery, he tried to establish himself in the practice of law, but failed, and his wife had to work and support him. This was a source of much shame to him. The night before his suicide he met a male attendant in Boston whom he had known at the Sanatorium and who was also down on his luck, and played a sharp game of pool with him. During the game he tried to persuade the attendant to make a suicidal pact with him. The next morning he arose as usual, helped his wife with the household duties and saw her off to work. Then he took the baby to a neighbor's to be cared for. At noon he was found hanged. I knew this man intimately and did not believe his emotional nature capable of such extreme. I might add that there was a conflict in a great attachment which he felt for an attractive social worker who had been extremely kind to him.

SYPHILIS.

The syphilitic of the cerebrospinal type is frequently suicidal. Possibly the generally accepted idea among the more educated, that lues is a terrible and hopeless disease, in addition to its social significance, aids in further depressing the sick mind. A woman contracted lues in the throat from kissing, at about twenty-five. At thirty years, she married well; at fifty, she had a few days of acting queerly and was fearful. Her sister left her alone in the house for a few minutes and when she returned found the woman on the kitchen floor, unconscious, and with a tube from the gas stove in her mouth. She was brought to, but soon developed a drowsy state and showed evident signs of a basilar gummatous process and was cured by appropriate treatment.

A man of fifty was a well-known teacher of pianoforte. He was of a highly nervous and aesthetic nature, and had sounded all the heights and depths of sensual joy and sorrow. He was also an alcoholic and morpho-manic, and had had at least one attack of acute alcoholic hallucinosis. His blood gave a four plus Wassermann, and he did well on anti-syphilitic treatment. A few weeks later, fearing that another attack of hallucinosis would develop (to which syphilites seem peculiarly liable after alcoholic indulgence) he took an overdose of morphia and died at an emergency hospital in Boston.

Another man of about fifty, broker, unmarried, who had an oncoming tabo-paretic process, was markedly hypochondrical. He had for many years to care for a dementia precox brother, and now got the idea that he, too, must spend the rest of his life restrained in an institution. His pleading for reassurance was persistent to the point of exasperation. However, he had never suggested nor attempted suicide. Nevertheless, he was found one morning hanging by his bathrobe cord.

ALCOHOL AND ARTERIOSCLEROSIS.

Alcohol in itself only leads to suicide by promoting acute hallucinations in which the patient may kill himself through terror. Arteriosclerotic men occasionally kill themselves; here there is probably a luetic element. Theoretically, we can conjecture the blood supply of the optic thalamus is disturbed. A man of sixty-five had a slight period of depression. He was a successful business man of large interests. One morning he went to business as usual and was later found by his desk where he had shot himself. Two of his sisters for whom I had cared had died of senile arteriosclerotic dementia. There was a history of suicide in the family.

PSYCHASTHENIA.

The psychasthenics occasionally attempt suicide, but rarely have sufficient continuity of purpose to carry out the act, because they are too indecisive. A woman who was a typical psychasthenic was taken to a hospital in New Hampshire which was near the water. The nurse missed her from her bed about five o'clock one morning, and rushing down to the water, found her wading up to her neck. She called to her to come out at once or she, the nurse, would lose her job, whereupon the patient came out and later made a fair recovery.

MENTAL HYGIENE WORK.

I would plead for wider publicity of the fundamental facts laid down in this paper in order that the family guardian who has this problem of suicide to deal with in some member of the family may be more amenable to

medical advice. Indeed, there is need for a better understanding of the subject by many of the profession. In one year, I had occasion to warn eight different families of the probability of suicide in persons who had passed through our institution. But because they could give a rational account of themselves, the husband or other responsible person, often backed by the family physician, allowed them to go to their home or to a nurses' home, where they would not be so closely supervised and "be amid normal surroundings." It is a curious fallacy of those who know little or nothing of mental disease that it can be produced by environment. All of these eight persons killed themselves. Mendel's axiom that "disease of the mind means disease of the brain," needs greater publicity.

CONCLUSION.

While disease may be, perhaps usually is, the final determining factor in suicide, the underlying substrata of inherited tendencies is, however, most important. It has been said that normally human beings desire life above all things. I do not believe that this is true. Of course, no one desires to suffer, but there are many persons otherwise normal who would gladly "lay them down in their last sleep," if they could but learn of an easy way of thus evading "the slings and arrows of outrageous fortune."

The type of person who has a fundamentally self-abasive temperament is much more likely, under stress of adverse environment or disease, to wish himself out of the world. If he has no belief in a future life with its punishments and rewards, this is still another reason for hastening that annihilation which will rid him of the conflict of life and bring sleep, that sweet sleep which knows no waking.

APPENDICULAR LITHIASIS. REPORT OF A CASE UNIQUE IN THE ANNALS OF SURGERY.

BY HORACE PACKARD, M.D., F.A.C.S., BOSTON.

THE case which furnishes the theme and inspiration for this communication is as follows:

A man fifty-one years old had suffered recurring attacks of abdominal pain, very mild in character, transient, and not necessitating absence from business nor the advice of a physician. On the afternoon of Wednesday, June 1st, the writer was summoned because this attack which had already continued five days showed no signs of abatement. The patient was in bed and presented the general appearance of a normal person; pulse regular at 76, respiration 18 and temperature 99.8/10. He had pain which began in the "right groin" 5 days before; today he feels pain about the navel and has moderate soreness all over the abdomen, appreciable on moving himself about the bed and on palpation. There is a distinct focus of tenderness on deep pressure over the normal location of the appendix. Of urinary symptoms he has none thus ruling out ureteral and renal colic or making them so remote a contingency that they were not considered.

In view of the continuance of the present attack, even as yet with no alarming general symptoms, but with a distinctly located focus of tenderness, immediate operation was advised and accepted on the diagnosis of probably some unusual departure from normal in or about the appendix.

The patient was removed to the Mass. Homeopathic Hospital and operation performed without delay. The caecum was quickly exposed and was found bound down in the depths of the pelvic fossa in the midst of an indeterminate mass of adhesions. Enlargement of the incision and exposure of the parts with broad, deep retractors finally cleared the doubt by demonstrating an enormous appendix densely adherent in the depths of the fossa. On palpating it carefully and separating the adhesions it became apparent that some kind of an extremely hard substance was associated with the appendix. Careful finger dissection finally delivered the appendix which showed a ragged hole in one side through which protruded a large stone of irregular shape and with apparently the hardness of porcelain. Strangely no pus was encountered in the course of the manipulation—the ragged hole in the side of the appendix was apparently caused by pressure necrosis.

The appendix was amputated, the stump closed with chrome gut and drainage established.

Examination of the stone showed a fang-like portion such as might come from the jaw of a lion or tiger and a shapeless portion in a somewhat angular relation which might be compared to a fragment of alveola. (See Ill.) Report of pathological examination by Prof. Watters is as follows.

ILLUSTRATION.

Mr Dear Doctor:—

The specimen received from you some time ago consists of an appendix 7 cm. x 1.5 cm. in irregular diameter. This shows a marked enlargement at the proximal end with much thickening of the walls. At a point 2 cm. from the cecum is an irregular oval area of apparent perforation. The mid-portion of the appendix shows almost complete obliteration of the lumen. At the tip of the cavity is found an elongated concretion 1.5 cm. x .6 cm. This shows a somewhat smooth surface on its proximal end suggesting a facet formation. Accompanying the specimen is a large concretion weighing eight grams. This measures 4 cm. in length and is about 1 cm. in thickness. At one end the width is 2 cm. from which

it tapers to comparatively small point at the other end. On section both concretions are found to consist of inspissated fecal material and an amorphous crystal deposit of bile salts in an irregularly concentric arrangement.

General Review.

In an experience of thirty-one years in appendicular surgery—the writer's first appendectomy was on February 12, 1890—not infrequently small boluses of fecal matter have been found in the lumen of the appendix so resembling a bean or a date seed or a grape seed that they were on first inspection accepted as such, only to find on more careful examination that they were fecal concretions. These have been usually of semi-putty consistency crushing easily under finger pressure. In no case has there been any, previous to the one herein reported, of stony hardness. Surgical literature of the past twenty years has been quite carefully examined but no report has been found of any instances of appendicular lithiasis, approaching in size and hardness the one herewith reported.

Under the caption "A Large Fecolith in the Appendix" Dr. Wm. A. Dowd reports in the *Annals of Surgery*, 1917, LXVI, p. 506, an appendix stone "as large as a filbert."

There is much literature on "Foreign Bodies in the Appendix," but since there is a sharp distinction between appendicular calculi, *i.e.*, stones which are built up in the appendix through successive layers of fecal sediment, and foreign bodies which have gravitated into the appendix incident to their passage along the intestinal canal, no reference will be made to this chapter of Appendix literature except to briefly record the fact that shot, pins, glass, eggshells, bits of enamel, bristles, hairs, bits of wood, gallstones, pin worms, cherry stones, grape seeds, raspberry seeds, strawberry seeds, caraway seeds, fig seeds, are sometimes found in the appendix and occasionally form the nucleus of a fecal concretion.

An article by Fowler in the *Annals of Surgery*, 1912, entitled "Foreign Body Appendicitis with Especial Reference to the Domestic Pin," is a surprising revelation of the frequency with which that familiar every-day article gets into the intestinal canal.

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[1] Foreign Bodies in the Appendix. Ashe. Brit. Med. Jour., 1911, Vol. ii, p. 1198; Bidwell. London Lancet, 1911, Vol. ii, p. 944; Boyd. Brit. Med. Jour., 1912. Vol. i, p. 828.
[2] Thread Worms in the Appendix. Gripper. Brit. Med. Jour., 1912, Vol. i, p. 1072; Wilson. Brit. Med. Jour., 1912, Vol. i, p. 829.
[3] Pin Worms in the Appendix. Rornbluh. N. Y. Med. Jour., 1911, p. 529.
[4] Bird Shot in the Appendix. Vander Veer, N. Y. State Jour. of Med., 1916, p. 465.

WEDDING NOTICE.

Married, November 17, 1921, at Newton Centre, Massachusetts, Major Edward A. Coates, Jr., Medical Corps, U. S. Army (Fort Andrews, Massachusetts) and Miss Maude M. Nudd, West Newton, Massachusetts.

A NOTE ON THE PRESERVATION OF CELLS IN SPINAL FLUID AS MEASURED BY THE CELL COUNT.

By C. J. Campbell, M.D., L. M. Davidoff, M.D., and G. P. Grabfield, M.D., Boston.

[From the Medical Laboratory of the Boston Psychopathic Hospital.]

It has long been taught that cells in spinal fluid disintegrate so rapidly that such fluids must be counted as soon as possible after withdrawal in order to obtain accurate results.

Emerson,[1] Boyd,[2] Morris,[3] specifically emphasize the fact that the fluid must be "as fresh as possible." Plaut, Rehm and Schottmüller[4] in their book on cerebro-spinal fluid say "It is necessary that the examination in the counting chamber should take place immediately after puncture, because the cell elements very quickly settle and the more quickly, the more numerous the cells there are in the fluid." Obviously such a difficulty can easily be surmounted by thoroughly agitating the fluid. We have been unable to find in the literature any definite experiments proving that autolysis takes place on standing under proper conditions, although references to this are sometimes made in verbal teaching.,

In a clinic such as this one where a large proportion of the laboratory work is on spinal fluids, it is often inconvenient to count fluids very promptly and if cells do disintegrate as rapidly as has been stated, it would preclude the sending of fluids any great distance for examination. We have, therefore, attempted to find out the keeping qualities of the cells in spinal fluids under various conditions. The results are tabulated in the four tables. The fluids were counted in a Fuchs-Rosenthal chamber, a whole c. m. m. being counted for each fluid. The cells were stained by adding a small quantity of methyl violet solution (methyl violet 0.1; distilled water 50.0; glac. acetic acid 2.0) in a white blood corpuscle pipette, after the fluid had been *thoroughly agitated*. The stain was allowed to act about 10 minutes, the pipette thoroughly shaken, the chamber filled, and the cells then counted. Throughout this work no successive counts on a given fluid were made by the same man.

It was first shown (Table 1) that fluids

TABLE I.*

Date	Case	Diagnosis	Count Immediately on Removal	Count 2-4 Hrs. after Removal
6, 28, '21	T. S. (Ventricular)	Gen. Paresis	3	4
6, 28, '21	H. G. (Cistern)	" "	14	16
6, 28, '21	A. V.	?	17	15
6, 28, '21	R. R.	Gen. Paresis	8	10
6, 28, '21	M. J.	" "	43	54
6, 28, '21	Mrs. S.	" "	163	152

* These tables are illustrative of many more similar cases.

TABLE II. ICE-BOX.

DATE OF FIRST COUNT	CASE	DIAGNOSIS	CELL COUNT PER CU. MM.						
			Day 1	2	3	4	5	6	7	8
4, 16, '21	J. F.	Gen. Paresis	8	—	10	19	18	17	16	—
5, 4, '21	G. R.	"	42	—	24	—	44	39	47	37
5, 4, '21	A. O.	Post encephalitis psychosis								
		?	4	—	4	—	7	2	2	3
		"	6	—	1	—	4	4	5	6
5, 4, '21	G. M.	Gen. Paresis	10	—	25	—	18	11	11	11
5, 10, '21	C. G.	"	23	—	17	—	15	26	31	14
5, 10, '21	C. McD.	"	11	—	29	—	20	—	8	23
5, 10, '21	T. S.	"	20	—	23	—	16	—	8	11
5, 10, '21	E. C.	"	57	—	77	—	75	—	54	—
6, 21, '21	C. O.	"	7	—	7	—	16	—	8	—
6, 21, '21	E. C.	"	11	—	13	—	13	—	12	—
6, 21, '21	J. K.	"								18
AVERAGE			18.1		19		22			

TABLE III. ROOM TEMPERATURE.

DATE OF FIRST COUNT	CASE	DIAGNOSIS	CELL COUNT PER CU. MM.							
			Day 1	2	3	4	5	6	7	
5, 17, '21	W. M.	Gen. Paresis	3	7	3	5	3	4	7	
5, 17, '21	J. B.	"	7	5	6	4	5	3	4	
5, 17, '21	Sor.	"	7	6	6	4	2	6	5	(Bacteria)
6, 25, '21	Kel.	"	61			55			5	
6, 25, '21	Sal.	"	3		4		3		4	
6, 25, '21	Hub.	"	8		9		7		0	(Bacteria)
AVERAGE			15		15		12.5		4	

TABLE IV. INCUBATION.

DATE OF FIRST COUNT	CASE	DIAGNOSIS	CELL COUNT PER CU. MM.						
			Day 1	2	3	4	5	6	7
6, 21, '21	R.	?	14	—	10	—	4	Overgrown with bacteria	
6, 21, '21	J. C.	Gen. Paresis	14	—	3	—	3	Overgrown with bacteria	
6, 21, '21	J. B.	"	27	—	13	—	0	Overgrown wiht bacteria	
6, 25, '21	C. G.	"	47	—	21	—	0	Overgrown with bacteria	
6, 25, '21	J. B.	"	7	—	2	—	0	Overgrown with bacteria	
6, 25, '21	M. M.	"	124	—	38	—	0	Overgrown with bacteria	
AVERAGE			39		14.5		1		

counted immediately on withdrawal did not change their count when recounted the afternoon of the same day.

We then placed a series of fluids in the ice-box (Table II) and counted them daily. Much to our surprise these counts remained unchanged 7-8 days.

The next group (Table III) were left at room temperature and counted daily. It is to be noted that there were several extremely hot days during this period. It will be seen that these cells remained intact on the average of five to six days.

Finally we incubated a few fluids (Table IV) and found that these never lasted more than 3 days. At the end of 24-48 hours many bacteria were seen (our fluids were not handled with aseptic precaution after withdrawal).

From this study it is apparent that if *non-purulent* fluids be preserved at room temperature or in the ice-box and *well shaken before counting* the cell count will be correct for at least five days after withdrawal.

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[3] Morris, R. S.: "Clinical Laboratory Methods." 1913. D. Appleton & Co., New York.

[4] Plaut, F., Rehm, O., Schottmüller, H.: "Leitfaden zur untersuchung der Zerebro-spinalflussigkeit." 1913. Gustav Fischer, Jena.

A CASE OF BRONCHIAL ASTHMA, POSSIBLY DUE TO A SPOROTHRIX.

By Oliver H. Stansfield, M.D., Worcester, Mass.

The etiology is the feature of interest in this case.

The patient, a Jewish girl of 18 years, had had, since infancy, attacks of shortness of breathing and wheezing, appearing suddenly, usually at night and without apparent cause. Each attack had lasted one or two days, but the most recent attack had lasted four days. No cause could be ascribed for the first attack in infancy. No food had seemed responsible then or since. There had been no seasonal variation in the occurrence of the attacks.

The patient had been a little short of breath on exertion for some months, but had, otherwise, no symptoms.

She had had measles and pertussis in childhood, and tonsillectomy at twelve years of age.

There was no history of a similar condition in the family.

Physically, the girl was rather obese, without dyspnoea, cyanosis or flush. Her skin was quite clean; her fingers not clubbed. Her chest was somewhat emphysematous in shape. Nothing abnormal, except asthmatic breathing was found on examination of her lungs. (I am informed that sibilant râles had been heard a few days before.) There was no other abnormal physical finding.

A skiagraph of her chest showed some thickening at the lung roots and larger bronchi, but no further evidence of pulmonary disease.

Tests were made for sensitiveness to proteins, including hair proteins—the patient worked in a hat store—and thirty-two food proteins. All tests were negative.

Sputum examination was of especial interest. The sputum was water thin, colorless, with many white or pale yellow pin-head sized flakes in it. Many of these flakes were examined microscopically, and all were found to be made up of mycelia and yeast-like cells. No eosinophile cells, crystals or spirals were present, but a few leukocytes and streptococci were seen.

The yeast-like organism grew rapidly at room temperature and at 37° C., the growth being that described as characteristic of a sporothrix.[1]

A skin test, made with a protein prepared from a culture of the organism, was negative.

The patient was given sodium iodide, forty-five grains a day at first, and the dose increased three grains a day until ninety were being taken. The dose was held at this level for three months.

Periodic sputum examinations were made, the yeasts being seen gradually to disappear, not being found about two and a half months after the beginning of treatment. The patient suffered but one attack of asthma during this time (in the first month) and for nine months has had no attacks. She is now in good health.

Although decisive proof of the relation between the presence of the sporothrix and the asthma is wanting, yet there is a strong suggestion that the organism was responsible, perhaps in a manner similar to that by which various bacteria are held to cause asthma (whatever this mode of action may be).

There is also involved the beneficial effect of iodide in any bronchial asthma. While I have not before seen this effect persist for so long a time after cessation, my experience is rather limited.

The case, however, has been very interesting to follow, and is reported as being interesting and unusual.

My thanks are due to Dr. Benjamin H. Alton, who referred the patient to me.

REFERENCE.

[1] Monographic Medicine, II, 322. D. Appleton & Co., New York, 1916.

A CASE OF RECURRENT SPONTANEOUS PNEUMOTHORAX.

By Hyman Morrison, M.D., Boston.

This case is of interest because spontaneous pneumothorax occurred first on the right side and five weeks later on the left,—with ultimate complete recovery.

The patient, a young man of nineteen, apparently well, was suddenly seized with severe pain in the right chest, which made breathing difficult. This happened on Sunday evening, December 5, 1920, as he was leaving his home for a walk, after lounging about all day. He had worked unusually hard the week before, lifting and moving shoe cases.

I saw him shortly after the onset of his pain, and found him in bed, on his left side, doubled up, and grunting. Only occasionally did he cough. Any bodily movement increased his discomfort. Examination showed the classical signs of air in the right pleural cavity,—tympany, markedly diminished breathing, absent fremitus, and slight displacement of the heart to the left. Thoracentesis confirmed the diagnosis. The patient spent a fairly comfortable night with the aid of a narcotic. He was taken to the Beth Israel Hospital the next day, where an x-ray examination showed the right lung collapsed by air in the pleural cavity, and the heart displaced slightly to the left.

He was very comfortable during his week's stay at the Hospital, except that once he had pain in the left chest, but without perceptible physical change to account for it. The temperature, pulse, and respiration were normal throughout. On the 14th of December, nine days after the onset of his illness, an x-ray examination showed considerable expansion of

the right lung. On the 24th of the same month he reported to me feeling perfectly well. He had had no fever or discomfort whatever, and was up and about all day. There was still evidence of some air in the right pleural cavity, but there was no cardiac displacement.

On January 9, 1921, while out walking, he experienced an attack of pain in the left chest similar to that on the right side just five weeks previously. This time, also, I saw him soon after the onset, lying in bed on his right side, and in fairly marked dyspnoea. Examination showed tympany over the left chest above the fourth intercostal space in front and above midscapula behind; the breath sounds were markedly diminished over this area, and fremitus was absent; the heart was slightly displaced to the right. An x-ray examination the following morning showed partial collapse of the left lung due to air in the pleural cavity, with some displacement of the heart to the right.

The patient was comfortable, except during the day of the occurrence of the pneumothorax, and did not show any febrile reaction. His improvement was steady. Three weeks later examination of the lungs revealed nothing remarkable except slightly diminished breathing over the upper half of the left chest, and a positive D'Espine sign. In another month the lungs were clear. Subsequently he reported from time to time feeling well. Between December 1, 1920, and July 1, 1921, he showed a gain of twenty-five pounds in weight. The final x-ray examination, August, 1921, showed marked infiltration of the right hilus, with increased peribronchial markings along both the left and right upper bronchial trees; both apices were clear; the diaphragm was free on both sides.

This case complies fully with the definition of spontaneous pneumothorax (1) which signifies a pneumothorax coming on in apparently healthy individuals without ascribable cause, not resulting in any infection of the pleura, unaccompanied by constitutional symptoms, and healing rapidly and completely in a few weeks. Though this condition is not met very commonly there have been about a hundred cases reported in the literature. The case cited here is the third one I have seen in the last three years; the other two came to the Out-Patient Medical Clinic of the Massachusetts General Hospital. Cases of spontaneous pneumothorax with recurrence are less common. Hamman[1] in 1916 found sixteen instances in the literature.. Marshak and Craighead[2] in 1918 found forty-three cases. Several of the cases had more than one recurrence,—one as many as eleven attacks during six years.[3] In three of the cases cited by Hamman, and in one of his own, spontaneous pneumothorax recurred on the opposite side. A similar case was reported by West.[4] So the case reported here is the sixth in the literature of spontaneous pneumothorax recurring on the side opposite to that in the first attack.

Most of the reported cases of spontaneous pneumothorax were in apparently healthy individuals who eventually turned out to have tuberculosis, the most probable cause being a tearing of a pleural adhesion of tuberculous origin. Hamman's case is particularly instructive: A young man during a cold has sudden pain in the right side. A few days later, December 2, 1909, examination reveals a complete right pneumothorax; uneventful recovery in six weeks. On November 4, 1910, after lifting a weight, pain in the left side; examination reveals a complete left pneumothorax; uneventful recovery in four weeks. Recurrence of left pneumothorax, December 24, 1910. In October, 1913, cough, sputum, signs of tuberculous infiltration in both upper lobes; tubercle bacilli in sputum.

My patient, also, was apparently well. However, he gained in strength and weight markedly during the three months of rest incident to his two attacks of pneumothorax. Furthermore, during his early boyhood, his mother had active pulmonary tuberculosis. And, finally, roentgenography revealed evidence pointing strongly to a tuberculous infection. These data lead to the conclusion that there was a tuberculous origin in this case of spontaneous pneumothorax.

I wish here to express my thanks to Dr. S. A. Robins, Roentgenologist at the Beth Israel Hospital, for his courtesy in studying this case with me.

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Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

SYNOVIAL SKIN LESIONS.

MACKEE AND ANDREWS[1] call further attention to this subject, which was first approached by Hyde in 1883, later by Lingenfelter, Ormsby and Sutton. These synovial lesions occur on the dorsal surface of the interphalangeal, metacarpo-phalangeal, and metatarso-phalangeal articulations. The articulations between the distal and adjacent phalanges of the index finger and thumb are the parts most frequently affected. At this point there appears a small globular projection from the skin, not sensitive to pres-

sure, which develops slowly, in the course of several months, to the size of a large pea, and which contains a thick, whitish, yellowish or brownish fluid. As it develops, the lesion assumes the appearance of a vesicle or bulla, with usually a smooth and shiny surface, sometimes, however, more or less warty and with some telangiectases. It is usually translucent or semi-translucent, with fluctuation. When punctured, the lesion collapses, but the cavity soon becomes refilled with a similar gelatinous fluid. Bacteriologic examinations of the fluid have been negative. Radiographs show apparent relationship to the underlying articulations, although the exact pathology is obscure. There are no well-defined bursae in these locations, although in their articular aspects the synovial lesions of the skin suggest a relationship to ganglions.

This condition is rare, and the writers have seen two cases,—one was in a man of twenty-six, and was situated over the dorsal surface of the distal interphalangeal articulation of the middle finger of the right hand. It was a pea-sized, smooth, translucent cystic tumor, with a thick wall, fluctuating, not painful. The second case was in a woman of forty-eight years, and was of five months' duration. It was situated over the dorsal surface of the distal interphalangeal joint of the right index finger. It was painless, tense, semitranslucent, and the size of a large pea. On pressure, there appeared a hyperemic areola at its edges, and a pallor of the central portion. In neither of these cases was any bone involvement shown by the roentgenograms, which did, however, show plainly a connection with the joint cavity. Two cases of Dr. W. A. Pusey's, occurring in man and wife, are referred to and photographs of them reproduced.

With regard to treatment, excision or complete destruction of the entire secreting cyst wall is indicated; otherwise a recurrence takes place. This was done in the first case and there was no recurrence. The best method, however, they consider to be the roentgen rays. Hyde and Ormsby were successful in using unfiltered x-rays in several cases, while Sutton was equally fortunate with radium. In the writers' second case the lesions disappeared completely after one roentgen ray exposure, a dose of I Holzknecht unit skin distance, unfiltered, being applied to each side of the tumor, including the articulation in the field of radiation. "Four weeks after this cross-fire treatment the lesion had completely disappeared, and a second exposure of I Holzknecht unit skin distance, unfiltered, was given to its previous site. A roentgenogram, two weeks later, showed that the subcutaneous portion, which was connected with the joint, had entirely disappeared." Electrolysis and carbon-dioxid snow have also been employed with success.

FOCAL INFECTION.

Whitfield[2] makes this the subject of his third Lumleian Lecture delivered before the Royal College of Physicians of London. He thinks from his own experience, that the fact that the original focus of infection may often be in the skin itself, and not in some other organ, has received less attention than it deserves. He cites as an example, ordinary pediculosis capitis, in which it is frequently the case that an attack of impetigo contagiosa develops as a secondary infection. But in some cases further symptoms may be observed, such as an eruption of very small papules at the orifices of the hair follicles of the sides and back of the neck, resembling closely the papules of lichen scrofulosorum. In some cases this is followed by an acute outbreak of an annular or figurate erythema over the chest, shoulders and abdomen, which is followed by desquamation. If the pediculosis and impetigo are properly treated, this eruption will quickly disappear, and therefore Whitfield thinks it fair to assume that the generalized eruption is due to the absorption of toxin from the streptococcal infection of the scalp. The same thing may occur in the case of scabies, but it is less easy to identify. In patients with a varicose eczema of the leg there is often an acute outbreak on the arms and legs due to focal infection. But the type of eczematous eruption that he regards as most typically the result of focal infection is what he terms "flexural eczema," when it is seated in the axillae, groins, flexures of the elbow and knee, and in the submammary region in women. In these cases the original focus of infection is sometimes in the skin, more often elsewhere.

With regard to the gums and teeth, Whitfield has notes of many cases of different types of skin eruption which he considers are proved to be due to an infective periodontitis. He includes only the cases which have complied with the most rigorous tests, and these belong either to the group which contains purpura, erythema multiforme and lupus erythematosus, or else are forms of eczematous dermatitis. Among the latter a certain type of dermatitis of the arms which shows large, chronic, well-defined patches is most characteristic of infective periodontitis. He thinks also that many cases of erythema nodosum are due to focal infection. He has seen some evidence in favor of the view that alopecia areata is sometimes due to the teeth. With regard to dental irritation, he thinks erythematous patches on the cheeks in children, and also herpes, may be due to this cause, and that tonsillar infection is also a factor in the etiology of skin eruptions. Flexural eczema and lupus erythematosus are the types of eruption which he has chiefly seen associated with tonsillar infection, and several cases are described in detail. Incidentally, Whitfield mentions the influence of acute specific fevers on lupus ery-

thematosus, in one case an attack of enteric fever increasing markedly the extent of the eruption; whereas in eczema an acute illness will often be accompanied by a disappearance of the eruption. Some have thought from this, that it is dangerous to cure a widespread eczema too rapidly, although Whitfield, from careful observation, is inclined to think that in most instances the illness is the cause of the fading of the eruption, and that the fading of the eruption is not the cause of illness.

RESEARCH PROBLEMS IN DERMATOLOGY.

Schamberg[3] of Philadelphia, made this the subject of his presidential address to the American Dermatological Association in June of this year. With regard to the problem of cancer of the skin to which so much attention has been directed, he considers that the evidence, as far as it goes, points against the theory of parasitism. It cannot be doubted that the chemical or actinic rays of light are a factor of importance in the etiology of skin cancer, inasmuch as sailors and farmers, who are especially exposed to the sun's rays, are very subject to cancer of the face and hands. Schamberg states that he has seen many thousands of negroes with skin diseases, yet he has never met with a case of keratosis or cancer of the skin of the face in a full-blooded negro, the explanation being that the pronounced layer of pigment shuts out the harmful actinic rays. Roentgen and radium rays may also give rise to cancer of the skin, and xeroderma pigmentosum is cited, in which the sequence of the cutaneous phenomena —freckle-like pigmentation, dryness, atrophy, telangiectasis, keratosis and malignant neoplasms —recall the picture of chronic roentgen ray results. This disease occurs strikingly in families, in one case seven children out of a family of thirteen being affected, and it must be assumed that these children offer a congenital hypersensitiveness to the actinic rays. The disease is not hereditary, but some observers have thought that this hypersensitiveness resulted from consanguinity. Other causes of skin cancer favorable for further investigation are the prolonged ingestion of arsenic, the influence of long exposure to tar, soot, crude paraffin; and to repeated mechanical, chemical and actinic irritation.

With regard to acne, there is still room for continued research work, for we are still ignorant of the etiological relationships, although we have definite data as to the predisposing causes and as to certain factors that produce outbreaks. It is generally a disease of puberty and the following ten years, but the increased physiological activity of the pilosebaceous glands must be regarded only as a predisposing cause. The microbacillus of Sabouraud and others is regarded by many as the exciting cause, and yet, as it is found in large quantities in the follicles of the nose of almost all young people and adults, it is probable that this microbe is pathogenic only under certain conditions.

It seems probable that the endocrinous glands, when disordered, may produce great changes in the skin and subcutaneous tissue, and affect the sebaceous and sweat glands. In myxedema the sebaceous and sweat secretions are inhibited, and there is a falling of the hair. With regard to ichthyosis, Schamberg thinks that the harsh, dry and scaly skin, in which the sebaceous and sweat secretions are greatly diminished, and the hair imperfectly developed, suggests a disturbance of the endocrine glands, and in fact, cases of this disease have been reported in which there was atrophy of the thyroid gland and improvement after thyroid treatment.

There is much need and opportunity for research on the subject of eczema. In some cases the inciting cause is evidently an external irritant, often, however, active only when there is a systemic sensitization. Many eczemas are of mycotic origin, or due to protein sensitization, endocrine disturbance, intestinal toxemia, renal insufficiency, etc., but it is often difficult or impossible to determine which of these factors is causative.

ANTHRACENE CANCER.

O'Donovan[4] of the London Hospital, so situated as to offer a very valuable field for the study of industrial diseases, since there are concentrated on the Thames side many and varied industries which are often operating under unfavorable hygienic conditions, has previously written on the subject of epitheliomatous ulceration in tar workers, covering the cases observed in the London Hospital back to 1908. In these cases tar, pitch and creosote were the causes then discussed. It is to be noted that while many have failed in the experimental production of tar carcinomata, successful production of real undoubted carcinoma by tar applications has been recorded by Yamagiwa and Ichikawa, while Tsutsui claims to have produced hyperkeratosis, papillomatous growth and carcinoma in mice. Recently, J. Fiebiger and F. Bang reported that carcinoma with or without metastasis was produced in twenty-four out of twenty-six mice which survived a first painting with tar for at least half a year, the growths consisting of squamous and horny carcinomata.

Anthracene is the starting point of the alizarine dye industry, which comes over in the distillation of coal tar between 230° C. and 270° C. After standing, crystals of anthracene deposit, and this cake is sent by the tar distillers to the factory where the three patients worked; is unloaded by hand, and broken down; exposed to steam and washed

with solvent naphtha mixed with pyridene bases; the product is then distilled with potash and lime, washed with solvent naphtha and finally sublimed.

Three cases are described. The first was a patient of sixty-two, a worker for five years in an alizarine factory, where he unloaded boxes and sacks of anthracene "cake," a powder containing 40% of pure anthracene and smelling strongly of creosote. Previously the patient had worked for twenty-five years as a pitch-breaker, breaking up pitch with a pick and shovel and loading it into barges. At this work he had suffered from conjunctivitis, due to the pitch dust. He presented many telangiectases and follicular keratoses on his forearms, and on the back of his right wrist an ulcer with raised edges which proved to be a squamous and horny-celled carcinoma. The second case is that of a man of fifty-three years, who had worked for thirty years in the same factory, and who showed on the middle of the right cheek a buttonlike raised growth, of hard consistency and slightly ulcerated surface. Microscopically it proved to be a squamous and horny carcinoma, and it disappeared entirely after treatment with radium. The third case occurred in a man of fifty-nine years, who had worked in the same factory for thirty-two years, and for the last twenty years had been foreman in the anthracene purifying plant. There were many small keratoses and acne lesions on his forearms, a warty nodule on his right ear, and an irregular ulcer three inches by two inches in diameter, with a hard, rolled, raised border. This had been observed for four years and had enlarged rapidly the last six months. It proved, as in the other cases, to be a squamous and horny-celled carcinoma.

An inspection of all the men at work in this factory showed a deep staining of the hands and faces of the workers dealing with the crude anthracene, and the yard-men who handled the amorphous cake in boxes and sacks, showed hands stained deep brown, sometimes almost green, with very swarthy faces and necks; there were also acne papules and keratoses of their necks and forearms.

The writer's summary is as follows:

1. Elderly anthracene workers are liable to carcinomata of the skin similar to those found in chimney sweeps and in tar, creosote and paraffin workers.

2. These growths are squamous and horny-celled carcinomata; metastases have not been found.

3. Unlike tar cases, a multiplicity of growths in one patient was not met with. Four years was the longest and three months the shortest duration of the growths.

4. Minor lesions, acne, keratoses, telangiectases and pigmentation are common features in workers on the plant.

5. A plant may run for thirty-five years before a carcinoma case develops.

6. The handling of purified anthracene does not appear to have the industrial hazard attributed to the handling of anthracene cake.

MICROSPORON EPIDEMIC IN BERLIN.

A. Buschke and Gertrud Klemm[5] report that a microsporon epidemic has been active in Berlin since the spring of 1918, and has affected many orphan asylums, homes for children and institutions. There were isolated cases in outside children, but the schools generally were but slightly attacked. The writers had the opportunity for observing about three hundred children from two to fourteen years of age, of which the larger number were boys. In most cases there were either sharply bounded plaques, or the whole scalp was diffusely affected with small and large foci of diseased hairs, without a sharp boundary and merging into one another. The first named were the more numerous, and in some cases there was only a single plaque, in others from two to twenty foci. At first the plaques showed a mild degree of inflammatory redness, which soon disappeared in the centre, while the periphery extended. There were some fine scales, and there were broken-off hairs above the level of the skin; the hairs could be easily pulled out. A few cases showed a greater degree of inflammation and simulated tricophytosis more nearly. In six cases there was a condition of "kerion," which yielded quickly to treatment. In 25% of the cases there were lesions on the body also, most frequently on the face, less frequently on the neck and shoulders. These were mostly round or oval, slightly hyperaemic and scaling. There were some cases in adults, and there were instances of infection of those treating the children by epilation. According to the investigations of W. Fischer, the parasite is the same as that described by Klehmet in the epidemic in Hanover in May, 1919, and he calls it microsporon pertenue. With regard to treatment, the roentgen rays were first employed, but were given up on account of the occurrence of unpleasant constitutional symptoms and of forms of dermatitis. After some experimentation, an ointment of pyrogallic acid was decided on which gave good results.

PATHOLOGY OF RHUS DERMATITIS.

In an elaborate and fully illustrated paper on this subject, McNair[6] of Washington, D. C., asserts that in previous communications he has maintained that the poisoning due to Rhus toxicodendron is caused by Pfaff's toxicodendrol, while that due to Rhus diversiloba is caused by lobinol, which is neither bacterial nor volatile, but that actual contact with the

sap of the plant is unnecessary. In this case, however, the poison may be brought through an intermediary agent, such as the soot in smoke, the clothing, or shoes. Lobinol may enter the body by means of the cutaneous surfaces, the respiratory, alimentary, and genito-urinary tracts, and by the conjunctival surfaces. Both the sebaceous and sweat glands are sometimes the seat of Rhus dermatitis, as is shown by the large number of leucocytes surrounding them in the diseased skin, as are also the hair follicles.

The poison enters not only through the cutaneous glands and hair follicles, but through the surface of the skin itself. McNair thinks that a certain amount of destruction of epithelium, like that due to the phenol group, takes place before the poison reaches inward. Hence the thickness of the stratum corneum is an important factor, and explains why the palms, for instance, may be in contact with the poison and yet not be affected by it, while transmitting it to other parts of the body which are more susceptible. The stage of latency, meaning by this the period of time in which the Rhus poison is diffusing through and reacting on the skin up to the point of producing symptoms, is a limited one, from twelve hours to five days, and is influenced more or less by the amount of poison that is entering, and by various other factors, such as the thickness of the horny layer, and of the cell walls, the variety and amount of the cell contents, and the presence or not of lipoids, water, protein, etc. In severe cases, some effects are observed in various parts of the body, such as thoracic discomfort and slight dyspnoea and cough, headache, conjunctival congestion, etc., and occasionally delirium. There are records of three cases of external poisoning by Rhus that ended fatally.

The occurrence of eczematous conditions after one or more attacks of ivy poisoning, is an interesting subject. It is certainly true that the skin is rendered susceptible by attacks of ivy poisoning, but there are no grounds for the belief that any other cutaneous affections are directly caused by it. Mention is made of the undoubted fact that subsequent attacks of dermatitis, which cannot be distinguished clinically from the original attack, occur, often annually and at a time corresponding to that of an original attack, but without reëxposure.

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DEATHS.

FRANK F. TINGLEY, husband of Louisa Paine Tingley, M.D., September 28, 1921.

Book Reviews.

The Quimby Manuscripts. Showing the Discovery of Spiritual Healing and the Origin of Christian Science. Edited by HORATIO W. DRESSER. Cloth. Pp. 440. New York: Thomas Y. Crowell Company. 1921.

In *The Quimby Manuscripts*, edited by Horatio W. Dresser, we have the complete manuscripts of Dr. Quimby, many of them printed for the first time. Dr. Quimby practised in Portland, Maine, where he died in 1865. He has been called a mesmerist and a spiritualist, but his claim set forth in articles and letters to patients was to be a "mental healer"—"I tell the patient his feelings and my explanation is the cure."

Mary Baker Eddy was one of his patients and pupils in the early sixties, and when her *Science and Health* was published in 1875 it was charged that her inspiration was drawn almost entirely from Dr. Quimby. Thereupon was started a controversy which has never been satisfactorily settled. While Mr. Dresser states that his book is not controversial but documentary, and that it is presented "without apology or animus, but with the earnest belief that it will throw a flood of light upon a much discussed subject," the reader cannot help, in the light of the evidence submitted, from forming very definite conclusions. Dr. Quimby's son says that the religion taught by Mrs. Eddy was hers, but that the inspiration and the ideas were his father's.

Aside from the interest it will arouse among the Eddy or Quimby adherents, the book is a most important contribution to the subject of mental healing. The psychiatrist may find in Dr. Quimby's letters to patients much that is in accord with his methods of today. The medical practitioner, however, may not endorse too enthusiastically the following:

"A thought is sown in the mind while asleep or ignorant, it grows and comes forth. The curiosity tastes; it produces a strange sensation in the throat. The spirit inquires, the answer comes, Bronchitis. The spirit is disturbed and tries to rid itself of its enemy. This disturbance is the effect called disease. Now if no name had been given or fears excited, the idea would have died of itself.—Oct., 1859"; or

"Smallpox is like a tree whose fruits are scattered abroad infecting those who eat them. It is a superstitious idea and like all such, it has a religious cast. It deceived the world so that every person was liable. Therefore the idea 'kine-pox' was sent into the world that all might be saved or vaccinated. As many as received the virus were baptized with the belief and were saved. Here is introduced another world which is deliverance from smallpox. To

all who have passed from their old belief into the world of vaccination there is no fear of death from smallpox, but a fear lest they have not been vaccinated with genuine virus. Now what does their salvation rest upon? It rests on no principle outside the mind. In ignorance of causes people are satisfied with someone's belief that there is virtue in this savior. Thus their minds are quiet and the fruits are a milder disease, if the graft is put into a healthy tree (or child)."

Diseases of the Nervous System. By H. CAMPBELL THOMSON, M.D., F.R.C.P. Third Edition, Revised. Pp. xvii—566. New York: Paul B. Hoeber. 1921.

This concise and readable volume, embodying the essential facts of general neurology and at the same time keeping abreast of the recent advances, has reached its third edition. It is valuable for the student as a textbook and for the general practitioner, who is not a specialist. As a reference volume the text is clear, systematic and helpful, and the illustrations and plates are of a high order, particularly the outline illustrations of the body in which the principal symptoms in the various system diseases of the spinal cord are designated. The author avoids any elaboration or detailed discussion of controversial points and particularly wisely refrains from any personal opinion on psychoanalysis, referring the reader to the special treatises on the subject.

The psychoneuroses, which as a rule are so inadequately treated in many textbooks, are here clearly and admirably described as "a group of cases in which the symptoms represent some degree of failure of the individual to adapt himself adequately to the realities of his daily life." For the general practitioner who sees a large number of these neuroses in their incipient stages, such a definition of what the psychoneuroses really are, is of great importance and represents a healthy liberation from the usual cut and dried conception of a nervous breakdown as caused by "overwork," when this factor should be considered as merely a precipitating cause. The neuroses are discussed from the psychological standpoint, as all neuroses should be discussed. It seems strange to find in so admirable a volume, that blind adherence to medical tradition, *i.e.*, valerian mentioned as a "useful drug" in the treatment of hysteria. The chief criticism of the book as a whole is, that it is rather too descriptive, there is too much pigeon-holing of diseases, and it is not sufficiently dynamic in its conceptions.

The Practice of Urology. A Surgical Treatise on Genitourinary Diseases, Including Syphilis. By CHARLES H. CHETWOOD, M.D., LL.D., F.A.C.S; former Professor of Genitourinary Surgery, New York Polyclinic; Visiting Surgeon to Bellevue Hospital; Consulting Urologist, French Hospital; Special Consulting Surgeon to Knickerbocker Hospital, St. John's Hospital (L. I. City), Nassau Hospital (Mineola), St. Agnes' and White Plains Hospital; Member American Association of Genitourinary Surgeons, American Urological Association, L'Association Internationale D'Urologie, etc. Profusely illustrated. Third Edition. New York: William Wood and Company. 1921.

The first edition of this book was published in 1913, the second in 1916 and the present volume is the third. The book has been already favorably reviewed in this JOURNAL. The present edition differs little from its predecessors except that it contains references to new surgical procedures and new remedies made necessary to bring the book up to date. Its appeal to the reviewer is, as it has been always, the fact that, instead of being merely a collection of material suitable to a work of this scope and character, the book seems a sincere embodiment of the author's personal experience and viewpoint, presented with a simple forcefulness which is convincing and which makes the reader feel he is getting much more than some facts gathered from many sources. It is a pleasure to testify once more to the value of the book as well as to its attractive appearance.

Benign Stupors. By AUGUST HOCH, M.D., Pp. 284. New York: The Macmillan Co. 1921.

The sudden death of Dr. August Hoch in 1919 in the midst of the preparation of a monograph on stupors, removed from American psychiatry one of its most inspiring representatives. His work and long experience at the McLean and Bloomingdale Hospitals and later at the Psychiatric Institute, and his training in psychopathology developed an investigator of keen clinical insight. The monograph on stupors was very fortunately practically completed and from the copious notes of the uncompleted portion, the editor of the book, Dr. MacCurdy, has been able to present Dr. Hoch's final and most mature opinions on a type of mental disease, which in the past had presented so many diagnostic difficulties.

This monograph, as its sub-title indicates, is really a study of a new manic-depressive reaction type, which Dr. Hoch, both from the clinical and interpretive standpoints, has elevated to what amounts to the dignity of a new psychiatrical entity. The various stupors which lead to recovery (hence the name benign stupors) are interpreted from the standpoint of mental conflicts and life reactions, a

healthy and productive emancipation from past tendencies to interpret the disorder in vague terms of organic brain disease. Within the brief limits of a review, it is impossible to give in detail even the outlines of this thoughtful and inspiring work, which will ever remain as one of the high-water marks of American psychiatry. Dr. Hoch's long training in experimental psychiatry and mental mechanisms, together with his natural ability as a shaper of psychiatric thought, has been brought to bear in the production of a monograph where the interpretation of the cause of mental disorders is looked upon as more important than mere clinical description.

It has long been observed that some stupors progressed to recovery while other cases ended in an emotional deterioration. This is a point of great practical importance in both diagnosis and prognosis, and it is shown how essential under these conditions, is prolonged clinical observation with an ability to interpret the meaning of the patient's various stupor reactions. The stupor is frequently associated or mixed with a manic reaction of exaltation and this symptom has to be differentiated from the superficial silly behavior of the malignant stupor of dementia praecox, which according to the descriptive German psychiatry, is termed Katatonia.

The stupors, like all functional psychoses, are considered an essential life-reactions, a failure of adaptation, an attitude of defence similar to feigned death in animals, or a break or a regression from a reality which the patient is unable to face. Briefly then, the stupor symbolized the death of the patient. The essential mental symtoms of the stupor reaction are a more or less marked interference with activity, often to the point of complete cessation of spontaneous and reactive motions and speech, interference with intellectual processes, affectlessness and negativism, all of which symptoms are interpreted as a more or less successful withdrawal from environment and the conflicts of life. The death idea, in stupor or at its onset is practically universal, often leading to attempts at suicide.

It will be seen from this brief sketch of the stupor reaction how fruitful are psychoanalytic conceptions utilized by Hoch to explain what had previously been thought inexplicable or merely described in technical terms. The future of psychiatry, if it is really going to interpret mental diseases and not be satisfied with mere cataloguing of symptoms, must be along psychoanalytic lines. This monograph will ever remain as a monument to one who clearly perceived the underlying causes of mental disorders as an essential life reaction and not as an accidental and disordered grouping of symptoms.

Operative Surgery. By J. SHELTON HORSLEY, M.D., F.A.C.S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va.; with 613 Original Illustrations; Illustrated by Miss Helen Lorraine; Copyright, 1921, by C. V. Mosby Company (All rights reserved).

In his preface, the author states very emphatically that particular stress has been laid upon the preservation of physiologic function and the interpretation of biologic processes that follow surgical operations. This is an admirable description of just what the author has tried and admirably succeeded in doing in this very valuable little volume.

His introductory chapter and his chapter on surgical drainage are especially valuable in that they stress adequately the particular point which the author wishes to bring out in regard to the physiology of the body after surgical operations. In speaking of surgery of the intestines, he shows definitely how unphysiologic lateral anastamosis is. He devotes six excellent chapters to the surgery of blood and blood vessels and shows how impossible a complete reversal of the circulation is in spite of the evidence produced by Carrell and Guthrie.

Throughout the whole book, reasons for the various operations based upon restoration of adequate physiologic function are insisted upon. Many clever bits of technic are referred to. One might say that the book contains many operations of rather unusual type.

The illustrations of some of the very delicate and difficult plastic operations on the face and the eye and nose are of great value. The illustrations are adequate in number and give an excellent description of the operation depicted. One might wish, however, that there were a few more of the more difficult operations described by illustrations as well as text.

His chapters on orthopedic surgery are concise and well illustrated. Surgery of the thorax is dealt with in a brief but adequate manner. The most of the illustrations are unusually clear and especially some of those which describe unusual operations.

Our only criticism is that some of the chapters on important subjects are unusually brief but, when one realizes that the context is the result of an effort to condense in many cases, this fault can be partially overlooked.

For its size, the volume adds a valuable contribution to operative surgery.

Influenza—An Epidemiologic Study. By WARREN T. VAUGHAN, M.D. Published by The American Journal of Hygiene. Monographic Series, No. 1.

For review of this monograph see editorial, "A Study of Influenza," on Page 668.

Current Literature Department

ABSTRACTORS.

GERARDO M. BALBONI — FRED S. HOPKINS
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AUSTIN W. CHEEVER — HERMAN A. OSGOOD
ISADOR CORIAT — EDWARD H. RISLEY
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JOHN S. HODGSON — BRYANT D. WETHERELL

Mesenteric Lymphadenitis Simulating Appendicitis.

STRUTHERS, J. W. (*Edinburgh Med. Jour.*, July, 1921,) in a brief article discusses the cases of enlargement of the mesentery glands simulating acute appendicitis with illustrations. He summarizes the subject as follows:

1. An inflammatory reaction occurs in enlarged mesenteric glands and the overlying peritoneum, the enlargement being usually but not always tuberculous, which gives rise to symptoms closely resembling appendicitis.

2. While the cause of the reaction cannot be precisely determined, it may be due to exacerbation of the tuberculous infection with periadenitis, to the invasion of tuberculous glands by other organisms, *i. e.*, to the onset of a mixed infection, or to the occurrence of a transient adenitis similar to that seen in other parts of the body in association with the surface infections.

Which explanation is the correct one he has been unable to determine. Microscopic examination of glands removed for the purpose has not cleared the matter up. From the evidence as it has presented itself he is inclined to think that most cases are probably due to a reaction provoked by extension of the tuberculous infection.

In any event the affection is a common one and should always be borne in mind in examining young patients presenting signs suggestive of appendicitis. The fact that its existence does not appear to be generally recognized has induced him to make this brief reference to it. [J. B. H.]

Intrinsic Cancer of the Larynx.

THOMSON (*British Med. Jour.*, June 25, 1921) discusses the general subject of cancer of the larynx with the following conclusions:

As Regards Usual Site of Origin.

1. Intrinsic cancer of the larynx originates on the vocal cords or in the subglottic area.

2. It has never been found in the posterior commissure (interarytenoid region), nor originating from the ventricular bands or the ventricle of Morgagni, in 50 cases examined both indirectly with the mirror and by direct inspection after splitting the larynx.

3. A malignant growth may originate on any part of a cord, but is more common in the central portion or anterior half than in the posterior area of the larynx.

4. As is now well known, an epithelioma originating in this region remains for a long time limited to the cord affected and the adjoining side of the larynx, but it may cross the anterior commissure, and, in later stages, it invades the arytenoid and the area to the outer side of it.

5. The inner surface of the cord may be affected primarily or by extension. The subglottic area may be invaded by a growth originating in a cord. But a cancer may also start below the level of the cords, in the subglottic area.

6. A subglottic cancer is much more common in the anterior than in the posterior half of the larynx.

As Regards Prognosis.

1. The superficial or projecting tumors of limited extent are the most favorable.

2. Those situated in the middle third or anterior half of the cord are more promising than those invading the anterior commissure in front or the arytenoid region behind.

3. Growths embedded in a cord, or extending into it below an intact mucosa are not so favorable.

4. An epithelioma extending along the inner margin of a cord is still less favorable.

5. Subglottic cancers are very unpromising as regards lasting cure by laryngo-fissure. They are frequently associated with impaired mobility or complete fixation of a cord.

As Regards Operation.

1. In every case, however limited the growth, the entire vocal cord should be excised from the anterior commissure up to and including the vocal process of the arytenoid.

2. The growth, with as wide a margin as possible of apparently healthy tissue all round it, should be removed in one mass; the excision should therefore go down to the lower edge of the subglottic area; above, it should pass through the healthy ventricular band; and externally it must include the perichondrium lining the thyroid ala.

3. To facilitate this the thyroid ala should be removed, so that a laryngo-fissure is really a partial hemilaryngectomy. [J. B. H.]

Pernicious Anemia.

LEVINE and LAPP (*Johns Hopkins Hospital Bulletin*, August, 1921) present a study of 150 cases of pernicious anemia which they commenced in 1915. This study is with particular reference to the gastric secretion. These cases are carefully elaborated and several are given in detail. The summary of their work and their conclusions are as follows:

Persistent absence of free HCl is practically a constant finding in cases of pernicious anemia. In our series it was noted in 99 per cent. of the cases. It is often present years before the blood shows any of the typical changes, and possibly always antedates them. It is, therefore, of considerable importance in diagnosis.

There seems to be a distinct familial factor in pernicious anemia.

The incidence of this disease in English speaking people and Scandinavians was greater than in immigrants from Russia, Italy, and Eastern Europe. Syphilis played no significant rôle in this series.

Eosinophilia, even of a very marked degree, was a frequent finding.

The proportion of males to females was as 2 to 3. The average age of both sexes was about 51 years. [J. B. H.]

Treatment of Asthma by Autogenous Streptococcal Vaccines.

ROGERS (*British Medical Journal*, July 16, 1921) concludes as the result of his investigation on the treatment of asthma by vaccines as follows:

1. In 15 per cent. of the cases the treatment failed to give material relief of a lasting nature.

2. In 32.5 per cent. great relief was afforded, but it was either not permanent or it was incomplete.

3. In 52.5 per cent. the patients remained well when last heard of from one-half to four years after the treatment. [J. B. H.]

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A STUDY OF INFLUENZA.

History tells us that before many years another epidemic of influenza will arise. What have we learned about the disease from the outbreaks of 1918 and 1920? The *American Journal of Hygiene*, in Number one of its Monographic Series, has published an exhaustive study of influenza from the epidemiological point of view, by Warren T. Vaughan, of the Department of Preventive Medicine and Hygiene at Harvard.

In this thorough and careful piece of work, Dr. Vaughan summarizes the history of influenza. Apparently there are some grounds for believing that the first recorded outbreak was in the year 412 B. C. The earliest epidemic that can definitely be said to have been due to influenza occurred in 1173; since then, there have been some eighty similar visitations; all, so far as can be ascertained, being more or less similar. The epidemic of 1889-90 may be taken as an example. This plague began in Bokhara and within eleven months had extended over the whole world. The early cases, as is usual, were mild; then the disease, increasing in severity, "exploded" in one community after the other. "Commerce follows the flag," but epidemics follow the great lanes of travel. They invade the cities first; smaller and more isolated communities often escape the primary wave, but suffer when the secondary wave strikes them. Infection is spread from man to man, and is distributed particularly well in crowded places. People who are really isolated, such as lighthouse-keepers, escape.

The incubation period is not less than twenty-four hours, and usually is less than three days. Above the age of fifteen, females are slightly more susceptible than males. Predisposing causes are fatigue, intercurrent illness, environmental changes and exposure to inclement weather. In 1918 it was the new recruits in our army cantonments who suffered most.

Vaughan endeavors to trace the actual progress of the pandemic of 1918—an outbreak which he places among the great plagues of history. There is evidence which shows fairly conclusively that influenza was endemic in China, the United States, and France, during the spring of 1918. It was probably from the focus in the United States, Vaughan believes, that the true epidemic started. Over 500,000 died in this country; in India, more than five millions. From Esquimaux to South Africans, practically all the people of the earth paid toll.

Having considered the epidemic in its broader relation, Vaughan turns to closer scrutiny. He conducted a survey of some 10,000 people living in six selected districts in Boston. These districts were arranged according to economic conditions—very poor, middle class and well-to-do. From a careful analysis of the vast amount of data derived from this survey, Vaughan arrives at many of his conclusions.

He finds that as a rule the wage-earners are the first to contract the infection, presumably because they have been more in contact with other people. Very few families were totally disabled; usually one or more members escaped the infection. Those who lived under crowded conditions were slightly more liable to have the disease, but not remarkably so. Many escaped the epidemic of 1918 only to fall ill in that of 1920.

Previous infection confers an immunity lasting from three to five months; a previous attack, contracted on an average of ten to seventeen months before, conferred no protection against a second attack. Owing to the brief immunity caused by the disease, and perhaps to the natural immunity of those who escape, the epidemic subsides. After a period of approximately ten years, the disease, which has been appearing in a mild form here and there, suddenly assumes epidemic proportions and again sweeps through the land.

In considering the measures which may be taken to mitigate the severity of later epidemics, Vaughan advocates the following: He would have mobile units of investigators ready to proceed to any local outbreak, however small, to study the disease while it is still within control.

The medical and the nursing professions should be so organized that their services may be rendered without delay, should there be need.

The public should be taught that crowds, during an epidemic, are dangerous, and that personal hygiene is most important. One should sleep alone, avoid restaurants, and should boil all dishes after use.

Isolation and quarantine of infectious persons should be carried out. The use of a mixed vaccine composed of Bacillus Iufluenzae, Pneumococcus and Streptococcus, will undoubtedly tend to prevent serious complications.

The proper use of face masks, Vaughan believes, is difficult to enforce. If used at all, they should be made to cover the entire head.

The American people do not like to be reminded of unpleasant possibilities. Their easy optimism tends to make them forgetful of dangers of the past and oblivious to those of the future. Outbreaks of influenza, while not so accurately timed as the tax bill, seem to be as sure. It would be a pity if we found ourselves as poorly prepared to meet the next epidemic as we were to meet the last.

CRITICISMS OF THE SUGGESTIONS OF DR. HUGH CABOT.

THE *Indiana Medical Journal* has published a bitter denunciation of statements attributed to Dr. Hugh Cabot, and the article has been copied by the *Illinois Medical Journal*. The statement by Dr. Hugh Cabot is quoted as follows: "The limitations of the services of the University Hospital to the indigent people of the state, to my mind, is undemocratic. The hospital should be open to rich and poor alike." In the article it is also stated that "We all know that the hospitals of the University of Michigan have been pauperizing the community, not only in Michigan but in sections of Indiana and Ohio, by furnishing gratuitous medical and surgical treatment to anyone who applied, whether able to pay for such treatment or not."

While making an attack on Dr. Cabot's ideas, he is referred to as "saftey entrenched in a soft berth," and the plan proposed is interpreted as leading up to annihilation of the medical profession; and further, that Michigan has been flirting with several socialistic features.

The following quotation shows the state of mind of the writer and is of interest to Dr. Cabot's friends here: "Now comes Dr. Hugh Cabot, resplendent with the glamour of a reputation secured in the literary, aristocratic and aesthetic atmosphere of Harvard University, with revolutionary and bolsheviki notions," etc.

It would not be quite courteous to forestall Dr. Cabot's discussion of the contentions made, for his reply will be interesting, and also because there is another side to the question which is of great importance, both from a teaching angle, as well as service for the people who are not in the indigent class. We trust that Dr. Cabot will find time to reply.

MEDICAL NOTES.

DURING the week ending November 12, 1921, the number of deaths reported was 182 against 189 last year, with a rate of 12.53. There were 24 deaths under one year of age against 30 last year.

The number of cases of principal reportable diseases were: Diphtheria, 72; scarlet fever, 26; measles, 32; whooping cough, 8; typhoid fever, 6; tuberculosis, 34.

Included in the above were the following cases of non-residents: Diphtheria, 10; scarlet fever, 3; measles, 1; whooping cough, 1; tuberculosis, 2.

Total deaths from these diseases were: Diphtheria, 2; whooping cough, 1; tuberculosis, 16.

Included in the above were the following cases of non-residents: Diphtheria, 2; tuberculosis, 2.

WEEK'S DEATH RATE IN BOSTON.—During the week ending November 19, 1921, the number of deaths reported was 203 against 192 last year, with a rate of 13.97. There were 22 deaths under one year of age against 30 last year.

The number of cases of principal reportable diseases were: Diphtheria, 74; scarlet fever, 38; measles, 54; whooping cough, 6; typhoid fever, 3; tuberculosis, 49.

Included in the above were the following cases of non-residents: Diphtheria, 5; scarlet fever, 4; tuberculosis, 9.

Total deaths from these diseases were: Diphtheria, 1; typhoid fever, 1; tuberculosis, 15.

Included in the above were the following non-residents: Tuberculosis, 2.

NEWS ITEMS.

DR. STEPHEN SMITH, first president of the Health Department of New York City, and founder of the American Public Health Association, in a recent interview, gave the following advice:

Work and keep out of the easy chair, don't eat too much meat, drink lots of milk; if milk does not agree with you, drink more; get plenty of sleep. Dr. Smith sleeps ten hours a night and takes a nap after meals; he never used tobacco, alcohol, tea, coffee, or candy. His mother followed these rules and lived to be 87. A sister lived to be over 100. The doctor approves of short skirts. He is planning a book on longevity.

PLANS FOR A DRIVE, for a community hospital for Holden, Rutland, and Princeton, are being formulated. A public meeting was held in the Rutland Town Hall, Friday evening, November 25, at 8 P.M., at which time the general subject was discussed.

ANNUAL MEETING OF NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS.—The annual meeting of the National Committee for the Prevention of Blindness was held in the south hall of the Russell Sage Foundation Building, 130 East 22d Street, New York, November 17th, at half-past four o'clock.

Dr. W. A. Evans, Health Editor, Chicago Tribune; Advisory Council, State Health Department, Illinois; Professor of Public Health, Northwestern University Medical School; Ex-Commissioner of Health, Chicago; Ex-President American Public Health Association, gave the annual address.

Moving pictures recently produced showing certain phases of the Committee's work were presented.

The 1921 session of the State Legislature passed a bill for preventing blindness from ophthalmia neonatorum (babies' sore eyes). The measure makes compulsory the reporting of the disease within six hours by the "professional attendant or other person caring for a new-born infant," the use of a prophylactic by midwives and in any state-aided institution, and the gratuitous distribution of such prophylactic by the State Department of Health. Violations are punishable by fine.

BOSTON CITY HOSPITAL OPERATING DAY.—Public operating day will be continued at the Boston City Hospital, beginning Friday, November 18, 1921, at 10 A.M.

The first monthly meeting of the Out-Patient Staff of the Massachusetts General Hospital was held in the Lower Out-Patient Amphitheatre on Wednesday, November 30th, at 12 noon.

Program: The development of the Out-Patient Department of the Massachusetts General Hospital with special reference to the medical services, Dr. Paul D. White.

Discussion—Drs. Algernon Coolidge, Richard H. Miller and Edward W. Taylor.

Doctors, nurses and medical students were invited to attend future meetings.

HONOR CONFERRED ON DR. WALTER LAWRENCE BIERRING.—At an extraordinary meeting of the Royal College of Physicians of Edinburgh, held November 1, 1921, it was unanimously resolved to offer the Honorary Membership of the college to Dr. Walter Lawrence Bierring of Des Moines, Iowa. This offer is quite unusual since the last honorary membership was conferred in 1809.

This offer has been made by the college to mark its sense of the distinguished services of Dr. Bierring in connection with reciprocity between the United States and Great Britain in matters of medical education.

Dr. Bierring is Secretary of the Federation of Licensing and Examination Boards of the United States, and a member of the National Examining Board. He has given effective service to the country in matters relating to medical education and licensure of physicians.

NOTES FROM DISTRICT SOCIETIES.

WORCESTER DISTRICT MEDICAL SOCIETY.—At the annual meeting of the Staff of the Worcester City Hospital, held Friday evening, November 18, 1921, Dr. Royal P. Watkins was re-elected president and Dr. John F. Rice was reëlected secretary. The program consisted of detailed reports from the Congress of Surgeons at Philadelphia by Drs. Royal P. Watkins, Arthur W. Marsh, Ernest L. Hunt and O. Draper Phelps.

THE WORCESTER WELFARE FEDERATION, with Dr. Homer Gage as president, has just completed a successful campaign for $350,000. This was the combined appeal of twenty-six of the charitable associations of the City of Worcester and was over-subscribed by $25,000.

Miscellany.

INSTRUCTIVE DISTRICT NURSING ASSOCIATION.

OCTOBER has been a heavier month than September, with more very sick people under care than for several months past. There were 23,497 visits made to 7,220 patients.

Among the new cases an increase notable in all the usual diseases was especially pronounced in those of the respiratory group: 50 cases of pneumonia, 65 of bronchitis and 58 of other respiratory diseases. There were eight cases of influenza and nine cases diagnosed as grip. Typhoid fever, showing only two new cases, reached the lowest point for several months. There were 30 cases of heart disease, and 43 of tonsillitis.

Thirty-three new cancer patients were taken on during the month, giving, with those carried from the preceding month, a daily average of about 41 under care. A comparison of these figures with those of 1920, when 257 cancer patients—64 of them men; 193, women—were cared for during the entire year, shows a big increase in the number of such cases now com-

ing to the Association. About 45% of last year's patients died. Probably at least 60% of these deaths might have been prevented if the condition had been recognized in its early stages and proper treatment given. The nurses lose no opportunity to urge that a doctor be consulted when they observe suspicious symptoms.

Fully one-half of all cancer patients cared for are referred to the nurses only after the disease has reached a very advanced stage, many of the patients just home from hospitals where their cases have been pronounced hopeless. Because of inadequate accommodations few of these can be housed by the hospitals through the prolonged period when they need much careful, expert nursing, yet a group of people so large and so afflicted cannot be ignored in the city's health situation. They must be nursed in their homes. This home nursing is done by the district nurses.

DERMATOCONIOSIS AMONG ZINC OXIDE WORKERS.

THE United States Public Health reports for November, 1921, referring to skin affections among trade workers, states that one-sixth of all skin cases are of occupational etiology. A full description is given of a troublesome skin disease among workers exposed to the dust of zinc oxide, called bly the operators "oxide pox" because of the similarity of the eruption to that of smallpox—of 17 men examined, 14 gave a history of having had attacks of oxide pox.

The disease is primarily due to clogging of the sebaceous glands by the zinc oxide and, secondly, to infection.

A full account of the methods of manufacture and behavior of the disease is given in the report.

MONTHLY RECORD OF REGISTRATION AREA.

THE Census Bureau's annual report for 1920 will be issued soon and will show that 1,142,558 deaths occurred in 1920 in the registration area of continental United States. This shows a rate of 13.1 per 1000 as compared with 12.9 in 1919.

The death rate from pneumonia increased from 123.5 per 100,000 in 1919 to 137.3 in 1920. The rate for chronic heart diseases increased from 131 to 141.9; for cancer and other malignant tumors from 80.5 to 83.4.

The rate for puerperal septicaemia increased from 5.8 to 6.6 and for other puerperal affections from 11.2 to 12.5.

The rate was also larger from whooping cough, measles, cerebral hemorrhage, congenital debility and malformations, scarlet fever, and appendicitis. Automobile accidents and injuries caused an increase from 9.4 per 100,000 to 10.4 in the same period.

The estimated population for this registration area is 87,486,713 which is 82.2 per cent. of the estimated population of the whole United States.

A marked decrease in the tuberculosis rate is shown by the figures of 114.2 for 1920 and 125.6 for 1919.

Typhoid fever shows a decline from 9.2 to 7.8.

These figures are all on the basis of the rate for 100,000 of the population.

HEALTH RULES APPROVED.

THE new regulations of the Boston Board of Health which provide that cut meats, fish, bakery products and other foodstuffs shall not be conveyed from place to place over any private way or kept in any place for sale unless effectively protected from handling by the public and from insects, dirt, and dust, have been approved by the Public Health Council of Massachusetts. Representatives of the marketmen contended that under the law such regulations could not be made effective on Saturdays or on days preceding holidays. Attorney General J. Weston Allen has ruled that the contention of the marketmen is not valid.

AMERICAN RELIEF ADMINISTRATION.

DR. CLEMENS PIRQUET of Vienna, who is now delivering the Silliman lecture course at Yale, is the discoverer of the scientific system known as "Pelidisi," on which the American Relief Administration has been basing its Austrian child-feeding and which it will now apply to the still more formidable Russian problem. The number of hungry in the famine regions being out of all proportion to the resources of the relief administration, some process of elimination is necessary to insure the food's reaching those in acutest need. Dr. Pirquet's "Pelidisi," which estimates accurately the degree of undernourishment in each child, gives a scientific standard by which the Administration's workers can select the children to be admitted to its kitchens.

The word is a composite one, being derived from the following, "pe," *pondus deceis*, the tenfold weight; "li," *linearis;* "di" *divisio*, divided by; "si," *sidentis altitudo*, the sitting height. It is based on the following scientific facts:

The cube of the sitting-height of a normal adult, measured in centimeters, equals the tenfold weight in grammes. An adult with a sit-

ting height of 90 centimeters has, for example, a normal weight of 90 x 90 x 90 divided by 10, or 72,900 grammes. This correct or normal adult weight is designated by the standard figure of 100. For a school child who does not carry as much fat and muscles, the Pelidisi is on the average, not 100, but 94.5. Children, therefore, with a Pelidisi of 94 or less are considered underfed; those with a Pelidisi of from 95 to 100 are well nourished, and those above that are overfed.

As a matter of practice, however, in the food kitchens, it is not always possible to admit children with a "Pelidisi" as high as ninety-four. The figure at which the line has been drawn in Austria for the winter of 1921-22 is 91.5. Just where it will be drawn in Russia, is not yet determined, but conditions there are even more desperate than they were formerly in Central Europe.

One million two hundred thousand children are now being fed in the famine areas by the American Relief Administration. They will be selected out of many whose lives are in imminent danger from starvation this winter, unless they can obtain foreign aid.

To enable the generous-hearted to help adults, the Administration has opened a Food Remittance Department, where packages to the value of from $10 to $50 in $10 units can be purchased for delivery to a designated individual or to the value of $500 to a recognized institution. Anyone wishing to purchase such a remittance can, by applying to the American Relief Administration, Russian Department, 42 Broadway, New York, obtain a blank to be filled out according to directions, and returned with the necessary check or money order. The remittances are then forwarded to Moscow for distribution to the warehouses in the famine territory, at which the recipients are notified to call for their supplies.

So economical and efficient is the buying and transportation of these supplies by the American Relief Administration that the amounts furnished are equal to those which could be purchased for the same money in an American store. There is one condition then attached to this service, and that is that twenty-five per cent. of all the food bought with the remittances must go to the Russian children.

Correspondence.

DEDICATION EXERCISES OF THE PEKING UNION MEDICAL COLLEGE.

Hunan-Yale Medical School,
Changsha, Hunan, China,
October 9, 1921.

Mr. Editor:—

I had what I call an exceptional opportunity this past month in witnessing the dedication exercises of the Peking Union Medical College, and it being an affair of such interest to the world at large and to the medical profession in particular, I thought you might be interested in having an account of the affair as a whole, although perhaps such reports have already appeared, which would make such a letter as this superfluous.

The Union Medical College, as our programs told us, was founded in 1906 by the co-öperation of six missionary societies and it was maintained by them until 1915. In 1916, the China Medical Board of the Rockefeller Foundation assumed the full support of the Union Medical College with the stipulation that the work of the college should be conducted by a Board of Trustees, which should consist of thirteen members, one to be appointed by each of the missionary societies which had organized the college and seven by the Rockefeller Foundation. The Pre-Medical School was opened in 1917 and the first freshman medical year was begun in 1919, the group of medical school buildings being completed at that time. The entire group of buildings have now been completed and this first year of teaching clinical medicine will start out with the hospital fully qualified as to staff and equipment.

The Peking Union Medical College owns about ten acres of land and upon this property are fourteen buildings, whose exterior architecture is Chinese, with sloping green roofs and painted eaves, after the manner of the palaces of the Chinese princes. The interior construction is strictly Occidental and includes the necessary equipment for elementary and advanced instruction in the major medical sciences and clinical branches. The plant maintains in adjacent grounds subsidiary shops, store houses, heating and gas plants and a garage.

The scientific aims are stated in the following way:

1. Primarily to give a medical education comparable with that provided by the best medical schools in the United States and Europe through an undergraduate curriculum; graduate training for laboratory workers, teachers and clinical specialists; and short courses to physicians.

2. To afford opportunities for research, especially with reference to problems peculiar to the East.

3. Incidentally to extend a popular knowledge of modern medicine and public health.

The official dedication exercises were from the 15th to the 22nd of September. The program was so arranged that the clinics and the strictly professional papers were presented in the mornings and the more popular talks in the evening.

On the morning of September 15th, Dr. G. E. de-Schweinitz, president of the American Medical Association, after he had brought the greetings of the American Medical Association to the new school, read the opening paper on "The Evolution of Ocular Symptoms of Pituitary Body Disorders."

That afternoon was given over to the formal inspection of all the buildings, the necessary equipment for running such an institution causing as much interest to many as the clinical and laboratory facilities afforded. One cannot describe in a letter the real impression which one gets upon seeing this beautiful group of buildings with their bright green roofs and eaves of much intricate design. If you are interested, you might get Dr. Peabody to describe them on his return to Boston at the first of next year. After the inspection, there was a tea in the grounds of the Assembly Hall, at which time the delegates and friends had the opportunity of meeting the distinguished guests. The Assembly Hall is a combination of recreation hall and chapel. It is equipped with reading and social rooms and an auditorium seating about 350 people. This auditorium has an excellent pipe organ, the personal gift of Mr. Rockefeller Jr., and a moving picture and stereoptican lantern.

In the evening, the first of the more popular addresses was given by Dr. Edward Hume of the Hunan-Yale Medical School, who spoke on "A Survey of Medical Education in China.

On Friday, the 16th, the morning clinics commenced, the departments of General Medicine, General Surgery, Obstetrics and Gynecology, Pathology, Ophthalmology and Otolaryngology each held special clinics, the distinguished medical visitors from abroad brought very closely into the discussions to which they made valuable contributions. The morning lecture was on "Plague in the Orient," with special reference to the Manchurian Outbreaks, given by Dr. Wu Lien Teh, a Chinese physician trained in England, who was director in charge of the last Manchurian outbreak.

The afternoon was given over to groups of sightseeing parties. In the evening, Dr. Vincent, president of the Rockefeller Foundation, gave a very amusing and instructive talk on "Adventures in Public Health."

Saturday morning, after the special clinics, Dr. Francis Peabody, of Harvard, gave an address on "The Clinical Importance of the Vital Capacity of the Lungs," which made a very favorable impression upon many of the delegates as it was an entirely new subject to them and yet it was presented the first time in a surprisingly simple manner.

In the afternoon, President Hsu of the Chinese Republic gave a reception and tea for the distinguished guests and delegates, at which he expressed, in behalf of the Republic, his appreciation for the great service rendered to China by the remarkable gift of such a group of buildings for the betterment of mankind. Mr. Rockefeller responded in behalf of his father and assured the President that the buildings were dedicated primarily for the service of the Chinese people.

In the evening, Dr. W. W. Peter of Shanghai (trained in the Harvard-M. I. T. School for Health Officers), who is in charge of the public health work of China, showed moving pictures of health films.

Sunday was observed by chapel exercises in the morning, led by Bishop L. H. Roots of Hankow, China, and in the evening there was an organ recital in the Assembly Hall.

On Monday morning, the lecture was to have been on "Problems of Parasitology in the Orient, by Dr. R. T. Leiper of the London School of Tropical Medicine, but to the disappointment of all the audience, he was unable to more than get started in his talk before he had to be taken to the hospital on account of illness contracted in British Guiana just before he sailed for China. Dr. Wm H. Welch, of Johns Hopkins, who had introduced him, filled out the hour by speaking on "Comparative Epidemiology."

In the afternoon occurred the dedication exercises which were most impressive. The brilliance of the gowns and decorations of the guests from England and the Continent made the guests from America appear quite sombre. Dr. Vincent opened the exercises, after the convocation, by formally turning the Peking Union Medical College over to its new director, Dr. Henry Houghton, who was previously the head of the Harvard Medical School in Shanghai. After a short speech of acceptance, Dr. Houghton took charge, introducing the speakers, Dr. W. W. Yen, the Chinese Minister of Foreign Affairs, spoke in behalf of President Hsu and the Republic and he was followed by the Minister of the Interior; Dr. S. P. Chen, the medical director of the Central Hospital of Peking (Government owned); and the Minister of Education, all of whom expressed their appreciation and promise of honest support. Mr. Roger Greene, speaking in behalf of the China Medical Board, spoke of the international character of the institution and the hope that it was to be one more link in the more friendly relations of all nations. Mr. Rockefeller then brought the greetings of his father and gave a résumé of the history and growth of the institution and the ideals for which it was striving.

In the evening, Dr. A. B. Macullum gave an address on "Biochemistry in Retrospect and Prospect.

Tuesday morning Dr. Florence R. Sabin of Johns Hopkins gave an illuminating address on "The Origin of the Blood Cells." In the afternoon there was a conference on Leprosy, conducted by Dr. Victor Heiser of the International Health Board. The evening address was on "The Search for the Ideal in Hospital Organization" by Dr. S. S. Goldwater of New York City.

Wednesday morning, Dr. Tuffier of Paris gave an address on Osteomyelitis, a subject of marked interest here in China.

The afternoon was given up to sightseeing excursions and in the late afternoon, Dr. and Mrs. Schurman, the new Minister to China, held a reception and tea for the guests and delegates. In the evening, Dr. Heiser spoke on "Hookworm Control as a Promoter of Public Health Agencies."

On Thursday, the last day of dedication week, Dr. S. Hata of Tokio gave an address on "The Present Status and Future of Chemo-therapy." Many of the audience regretted that Dr. Hata's English was such that many important details were lost, but the same people are looking forward to the time when the lecture will appear in printed form.

The last lecture was by Dr. Wm. H. Welch. He was introduced by General Wood who had just arrived in Peking two days before. His subject was "How Medicine is Advanced and Contributes to Human Progress."

The dedication week afforded me the opportunity of seeing many Harvard men, among them being Dr. Peabody, who is to teach in the Peking Union Medical School until December; Mr. Roger Greene; Van Gorder, H. M S. '15, one of the surgeons at the school; Dr. Adrian Taylor, who got his M.D. for the second time at H. M. S. in '17 or '18 and who is the professor of surgery there; Dr. Dunlap, head of otolaryngology; TenBroek and Robertson, in the department of medicine; Ernest Tso, H. M. S. '19, and Atwater, H. M. S. '18, who has just arrived in China and who after a year of language work in Peking will come to us in Preventive Medicine and Hygiene. Thornton Stearns, who took a surgical interneship in the M. G. H., was there as was also Way Sun New of Shanghai, who recently had a letter in your journal.

Respectfully yours,

MORRIS B. SANDERS, H. M. S., '19.

POPULAR UNREST.

Mr. Editor:—

Your edition of October 13 contains two articles, one dealing with Dr. Mayo's criticism of the methods pursued by nurses' organizations, and the other calling attention to certain popular criticisms of physicians' charges brought out by the recent action of the Johns Hopkins trustees.

In both cases there is evident popular unrest, and I take the liberty of raising the question as to whether in both cases there is not the same underlying cause of trouble, as yet hardly suspected by those chiefly involved.

In the case of the medical or surgical specialist, the ordinary criticisms of the custom of making varied charges for the same service, are too well known to need discussion; but there has arisen, under modern conditions, an objection of much more importance, namely, that this method of charging Peter to pay Paul I.O longer produces a compensation sufficient to make it possible to ren-

der Paul the service that has been found necessary for his vital needs.

If not savoring too much of Robin Hood,—as some assert,—and even if it were not subject to abuses at the hands of unscrupulous or eccentric practitioners,—as is undoubtedly sometimes the case,—this method has now become too primitive to serve the purpose required. As a result, both doctor and patient suffer:—the doctor from having his power of rendering adequate service curtailed; the patient from inability to command the service that he needs.

Neither realizes that the basic difficulty lies in the fact that the medical specialist (like the graduate nurse and the hospital) is trying to do an emergency business for a great body of persons who are unable to pay for such emergencies, no proper financial provision having been made to enable them to do so, although many other emergencies to which the same class of persons are subjected are reasonably well provided against.

These other emergencies are usually met by benefit payments or other forms of insurance paid by those liable to incur these unusual expenses, thus distributing the loss over many individuals and over many years. There can be no way of adequately meeting serious medical, hospital or nursing emergencies for the great self-supporting middle class except by similar methods, and this should be done preferably by private rather than by government organization.

In other words, the vocation, if I may not call it business, of the medical specialist is not properly financed in accordance with its nature and needs, and, until the existence of this financial microbe causing disease in his system of operation is recognized and properly dealt with, there is no possibility of rendering adequate service or of avoiding trouble and difficulty.

At present the case seems well-nigh hopeless, where the most ordinary financial principles are systematically ignored, and a financial disease is treated by the administration of a compound of charity and therapeutics worthy of the Middle Ages.

The vast amounts written, basing therapeutic systems on the erroneous assumption that the middle class patient cannot pay the cost of producing his service, inevitably end nowhere, so far as concerns the adequate accomplishment of the end in view. The task is one involving an enormous amount of work and enormous expense. It is the service of the class that supports the country and earns most of the money that is earned, having an aggregate income that exceeds that of the few conspicuous rich by many billions.

This class must be served in emergencies that do not entail regular expenses like food, clothing and shelter, but strike here and there like the emergencies of fire, cyclone, or accident liability, and cannot possibly be met out of the current incomes of the persons immediately involved. The aggregate income of this class is yearly increasing, as is also the cost of meeting adequately its medical, hospital and nursing emergencies. Yet no adequate attempts are being made to finance that emergency service from the pocket of the consumer, which is the only possible way in which it can be financed. It can be so financed in the same way in which his other emergencies are covered; and until an adequate portion of the income of that class is regularly diverted to this service, such service must necessarily be inadequate. The amount to be diverted is large in itself, but is only a small portion of the fund from which it comes, namely, the gross income of the great middle class.

In the face of this state of affairs, the doctor tries to make the richer pay for the poorer, the hospital trustee passes around the hat in the vain attempt to meet his increasing deficit, and the graduate nurse seeks legislative monopoly; while the public is increasingly dissatisfied, and the social reformer calls loudly to have the Government take the whole thing over and give us a poor imitation of England's copy of German paternalism.

As a hospital trustee, long troubled by increasingly inadequate results from constantly improving technical methods, I take the liberty of suggesting the study of group financial organization as a necessary adjunct to group service organization. This will be necessary if we are to be delivered from having to choose between inadequate service and political therapeutics for the great bulk of those confronted by the serious emergencies of sickness.

When the trouble has once been recognized as economic rather than medical, the case will be seen to require the calling in of the financial specialist in order that it may be dealt with in a thorough and competent manner.

R. M. BRADLEY, Boston, Mass.

PRELIMINARY TO THE LAST MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY IN WORCESTER.

Mr. Editor:—

Apropos of the recent correspondence in the columns of the JOURNAL on the desirability of holding the annual meetings of the Massachusetts Medical Society outside of Boston, the accompanying letter from the chairman of the committee of arrangements for the meeting in Worcester, in 1851, recently resurrected from the files, will interest the Fellows. It may be mentioned that at the October meeting of the Council, 1850, a cordial invitation for the Society to meet in Worcester, from John Green, Benjamin F. Heywood and William Workman was read, accepted and Worcester appointed as the place of the next annual meeting. At the February meeting of the Council, 1851, Dr. Workman and Dr. Green of Worcester, and Dr. Austin Flint of Leicester, were appointed a committee of arrangements. At the annual dinner in Flagg's Hall, about three hundred and seventy-five Fellows were present, on May 28, 1851, while the meetings, morning and afternoon, were held in the City Hall. On the previous day, forty-four councilors attended their annual meeting, seven more than were present at the meeting in Boston on October 1, 1851.

WALTER L. BURRAGE, *Secretary*.

Worcester, March 8, 1851.

Dr. H. I. Bowditch, Secretary:

Dear Sir: I received your note informing me of the election by the Counsellors of the committee of arrangements for the coming anniversary of the Massachusetts Medical Society.

We have no knowledge of the details of the arrangements for that occasion, and shall thereupon be under the necessity of asking some instructions from you. In fact, we hardly know what duties will be expected of the committee of arrangements. We suppose that the business transactions and other exercises of the Society during the meeting will be under the direction of the officers as usual. Then it will devolve upon our committee to provide a place for the meeting for the dinner, etc., and also to make arrangements for the members to visit such public places as we have. What has been the usual course in regard to procuring the dinner? Has it been a contract for the whole, or by the number present? These and similar queries we would like to have answered.

There will probably be more in attendance from this county and from the west than usually go to Boston. How will the attendance be from Boston and the eastern side of the state? And how many shall we provide for? We have halls of sufficient capacity and other conveniences to accommodate the meeting and for the dinner. And we shall en-

deavor to do all we can to make the occasion pleasant and interesting.

I suppose it would belong to the committee to solicit "scientific communications," of which Dr. Jeffries Wyman is chairman; together with the president to make the arrangements for bringing them out in the meeting. I have not the honor of a personal acquaintance with Dr. Wyman but should be very happy to receive any suggestions from him in regard to the business of the meeting.

I am sorry to learn that we are to have that everlasting discussion of by-laws renewed again this year. I had hoped that it might be put to rest for a season at least. Is there no way of "putting down this 'aggitation'"? I have some faith in the efficacy of introducing scientific communications.

Will you do me the favor to answer my enquiries and state particularly how much will be expected of the committee of arrangements, of if anything beyond what I have suggested. Of course, much cannot be done in the way of sightseeing in our small city, but whatever we have we shall be very happy to exhibit. Let me hear from you as soon as convenient.

Yours very respectfully,

WILLIAM WORKMAN.

WORCESTER FOR THE ANNUAL MEETING OF THE SOCIETY.

Mr. Editor:—

In the issue of the JOURNAL of October 6th, 1921, I had suggested that the Massachusetts Medical Society hold some of its annual meetings in some other city of the Commonwealth besides Boston, and that Worcester would make an ideal place for the next annual meeting of the society.

I have noticed that in several subsequent issues of the JOURNAL, some other Fellows of the society have seconded my conception that Boston has failed to attract the majority of our brethren, who feel that city, as a convention center, is now "played out," or as the Germans would say, "ausgespielt."

And as the honorable editor of the oldest medical journal in America has informed us that the state society "should not inflict itself upon any community without an invitation," I would respectfully recommend to the officers and members of the Worcester District Medical Society, through the medium of this journal, to take the initiative; to assume the responsibility of such an invitation and take the necessary steps in order to acquaint the officers of the state society with the feeling of hospitality which might pervade the minds of the local society's members.

Outside of the city of Boston, the laity is not aware of the existence of the Massachusetts Medical Society, and indeed, when matters of "earthly importance" are considered by the public, no mention is ever made of the state society. It appears to me that the public has never heard of this society, or else thinks that its labors are strictly confined to discussions of medical subjects.

A change in the meeting place would have the tendency to inform the public (and we are their servants) that the Massachusetts Medical Society has altruistic motives; that the public's welfare is an asset; that matters referring to the health of the people of this Commonwealth must be mutually discussed by both parties; that membership in the society has some import, both to the layman as well as the physician; that the criterion of the Massachusetts Medical Society is to promote the welfare of every institution for the public good; that the society's aim is to exert its influence to the end that no measure or law should be passed that will tend to diminish the high standard which envelops our health regulations today.

I should like to add that the time has arrived when the doctor must wake up from his ancestral slumbers and keep pace with other weighty problems of the day, besides the practice of medicine; and should he refrain from lending his influence in such matters, then no complaint ought to be offered by him if the public ignores his existence!

If I remember correctly, a former president of the Massachusetts Medical Society had once aptly remarked the following: "I advise the Fellows of the society to seek places in the state senate and legislature, so that to the end, medical matters appearing before the House and Senate would receive better consideration and more scientific explanation."

In conclusion the writer respectfully offers the following to serve as a motto of the state medical society:

The Massachusetts Medical Society is the "Medical Man's Means for Promoting Public Progress."

Respectfully yours,

MAX BAFF, M.D., Worcester, Mass.
(Fellow since 1903)

DR. TALBOT ON CANCER.

Mr. Editor:—

Your readers would be interested in my letter to Dr. Talbot about his article on "Cancer" which was published in the JOURNAL, September 15, 1921. His thought that the connective tissue system may have a function like the nervous system in uniting the various parts of the body functionally as well as anatomically, seems to me worth consideration. As far as I know, no one has suggested it before, in spite of the fact that it is the only tissue which demonstrably links all the other tissues together.

We must remember that anatomy was well advanced before the function of the blood vessels in carrying on the circulation was recognized, and it may be that connective tissue has a function as well as being a supporting structure. Certainly there are many phenomena which show that organs not obviously connected by nerve fibres have interrelations.

As a sidelight, I believe that the views of Mallory, in regard to the vicarious functions of the fibroblasts in forming bone and cartilage, are considered reasonable by other pathologists. In fact the fibroblast seems to be a Jack-of-all-trades.

For instance, who can say what the first few cells which form in granulation tissue are. Something buds from the nearest terminal arteriole—a mere string of cells. Soon they arrange themselves as a tube and we call them a capillary and presently a blood vessel with a well formed fibrous coat. But were the first few cells fibroblasts, endotheliblasts or embryonal cells more primitive than either? Certainly even the newest formed tissue is directly in contact with fibroblasts. What directs their growth in the process of repair? Talbot seems pretty well supported in saying that since we know that all parts of the body communicate with one another (*e. g.* position sense) and since the only tissue which we know to be present in continuity in all parts of the body is connective tissue, that it is not unreasonable to suppose the connective tissue to be a maze of telegraph lines. Perhaps Talbot's letter may stimulate someone to discuss his theory.

E. A. CODMAN, Boston, Mass.

X-RAY TREATMENT OF CANCER OF THE BREAST.

November 21, 1921.

Mr. Editor:—

I noted in the report of the Cancer Clinic at Beverly Hospital, published in the BOSTON MEDICAL and SURGICAL JOURNAL, November 17, 1921, a state-

ment that Dr. Ralph Leonard of Boston "particularly urged the doctors to resort to surgery for cancer of the breast and deeper structures and not use x-ray." Also the action of x-ray is "simply to burn the cancerous tissues" and that "at best, the treatment is simply palliative and our hope lies through radium."

I believe such statements as these should not go unchallenged, and I know that Dr. Leonard would wish some qualifications to be printed along with the portions of his address selected for publication. The report, as printed, certainly does not convey accurately Dr. Leonard's opinion of X-Ray Therapy.

The action of x-ray on cancer cells is destructive. It has been demonstrated by careful experiment that cells showing rapid proliferation, as evidenced by the number of mitotic figures, are more easily destroyed than slow growing and otherwise normal tissue. The problem for us, then, is to apply the radiation to malignancies in such a way that the abnormal cells are killed before the normal structures are seriously affected. It is not true that "the action of x-ray is simply to burn the cancerous tissues without affecting the other tissues." If it were, certainly the cure for cancer would be at hand.

In regard to the relative value of x-ray and radium in cancer, there is no disagreement between men well informed in the physics and nature of the two agents. The two radiations are of exactly the same nature; that from radium is small in amount and is more penetrating than that produced by our present x-ray apparatus. X-ray, on the other hand, can be delivered in large amounts. Prof. Duane of Harvard is now developing an x-ray equipment that will, it is believed, produce x-ray practically identical in quality with the Gamma Ray of radium.

Both radiations are dispersed according to the inverse square law. Radium has to be applied in close contact to the lesion since its radiation is small in amount. Therefore, the effect of radium is chiefly local. For example, suppose enough radiation from radium is applied to a lesion to produce destruction of malignant tissue 1 inch from the radium. Disregarding absorption, malignant tissue 1 inch further away, or 2 inches from the radium, will receive only ¼ the lethal dose. On the other hand, with the x-ray tube sufficient radiation can be generated having only slightly less efficiency, rapidly to produce a lethal dose at much greater depth. Suppose a malignancy is treated with sufficient x-ray to produce destruction at 10 inches. Disregarding absorption, the tissue 1 inch further away, or 11 inches from the tube, receives 100/121 of a lethal dose. Contrast this with the example cited with radium where the deeper tissue received 100/400 of a lethal dose. The practical application of these facts is that x-ray is the method of choice where large areas are diseased, and particularly in treating possible metastases. Radium is the method of choice when it is desired that the effect be more localized, especially in the cavities of the body. In many cases a combination of radium to the primary tumor, and x-ray to the area of suspected metastases, is the best solution of our problem.

I do not quarrel with anyone who urges "the doctor to resort to surgery for cancer of the breast" in suitable cases. But when the same doctors are urged not to use x-ray, I enter vigorous protest. What of the inoperable cases? What of the recurrent cases? And why not, in every case operated, x-ray to check metastases?

Unfortunately, our records of absolute cure by x-ray are scant. But in our experience our records show many cases that have been definitely benefited by x-ray treatment of cancer of the breast.

FRANK E. WHEATLEY, M.D., Boston.

NOTICES.

THE MEETING OF THE RESEARCH CLUB—to be held at the Harvard Medical School Amphitheatre in Building A, at twelve-thirty o'clock on Friday, December 2nd, will be addressed by Dr. W. L. Mendenhall, on "The Influence of Tobacco Smoking on Human Sensory Thresholds."

Yours very truly,

COMMITTEE.

THE BETH ISRAEL HOSPITAL, held during the past winter a series of clinical meetings which proved to be unusually successful, both in regard to interest and attendance. The speakers and their subjects were as follows:

January 5, James P. O'Hare: "Present day Methods in Diagnosis of Nephritis;" February 9, Daniel F. Jones: "Chronic Pancreatitis;" March 9, Paul White: "Cardio-Vascular Diagnosis;" April 13, E. Granville Crabtree: "Newer Developments in the Study of Pyelitis;" May 11, Wyman Whittemore: "Lung Abscess."

The list of discussors included: Dr. John T. Bottomley, Dr. A. L. Chute, Dr. L. M. Freedman, Dr. Fritz Irving, Dr. Roger I. Lee, Dr. S. A. Levine, Dr. Harry Linenthal, Dr. E. A. Locke, Dr. Hyman Morrison, Dr. Richard Ohler, Dr. Joseph H. Pratt, Dr. Oscar Richardson, Dr. S. A. Robins, Dr. Richard M. Smith.

The Hospital plans to arrange another series for the winter of 1921-1922. The first meeting will be held in the Auditorium on Wednesday evening, November 30, at 8.15 P.M.

The program will be as follows:

"Cardiac Syphilis," Dr. William David Smith; "Syphilis of the Central Nervous System," Dr. Harry C. Solomon; Discussion, Dr. William Duncan Reid, Dr. C. Guy Lane, Dr. Henry J. Perry.

Physicians are cordially invited. The telephone is Roxbury 5940 and visitors may be on call.

Refreshments will be served.

Committee on Clinical Meetings,
ALBERT EHRENFRIED, M.D., *Chairman*,
E. GRANVILLE CRABTREE, M.D., *Secretary*.

ANNUAL MEETING OF BOSTON TUBERCULOSIS ASSOCIATION.—On Tuesday, November 15, 1921, the Boston Tuberculosis Association held its annual meeting and election of officers. President John B. Hawes, 2d., reviewed the work of the Association during the year and Miss Bernice W. Billings, executive secretary, outlined a survey of tuberculosis cases undertaken by the Association. The speakers of the afternoon were, Dr. Jabez H. Elliott of Toronto, Ontario, who spoke of the "Toronto Preventorium for Children," and Dr. Henry D. Chadwick, who outlined "Work with Children at the Massachusetts State Sanatorium at Westfield," of which he is superintendent. Both papers were illustrated by means of lantern slides.

The officers elected to serve during the coming year were: President, Dr. John B. Hawes, 2d; Vice-President, Dr. James J. Minot; Treasurer, Mr. George S. Mumford; Clerk, Miss Isabel F. Hyams; and forty-nine Councilors. Those not previously on the Council are: Dr. Gerardo M. Balboni, Dr. William H. Devine, Dr. George S. Hill, Mrs. Roger I. Lee and Mr. Abraham C. Ratchesky.

HARVARD MEDICAL SOCIETY.—Next meeting in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance), Tuesday evening, December 13th, at 8.15 o'clock. Program: "The Mechanism of Fever," by R. T. Woodyatt of Chicago. Medical students and physicians are cordially invited to attend.

CYRUS C. STURGIS, *Secretary*.